

## Personal Jukebox

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*Sperate et virite fortes*  
Trust and Steadfast Strength



# Personal Jukebox

The perfect player for music lovers.

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*by D. Gene Bland, Sr.*

*Personal Jukebox is an application used to select and play music files. These are commonly referred to as .mp3 files.*

*If you love music and like to have it playing in the background most of the time, this is for you.*

# Personal Jukebox

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*Personal Jukebox (PJB) has been a labor of love. I would like to thank the numerous individuals that produced the freeware code snippets that I used to produce the application. Offering PJB as freeware is my way of giving back.*

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## Foreword

There are a great many ways to make a computer play music. This is just one of them. When I decided to design an application to play music files, I knew that I wanted some particular features.

The first was the ability to select the songs I wanted to hear. But, if I did not select a song, I wanted the application to randomly select one for me. However, I wanted the random selection to be made from a specific group of songs.

Another feature that I wanted would allow me to select songs to play from a computer other than the one on which PJB was running. I wanted this feature so that PJB could drive an FM transmitter, while I selected the songs to play from a laptop computer located in the vicinity of the FM receiver that I was listening to.

So, I decided to emulate the classic jukeboxes of the 1940s through the 1950s and beyond. Thus, was born Personal Jukebox.

Many people that have computers also have Hi-Fi sound systems that include an FM Stereo Receiver. I have been asked often how you could play all those songs on your computer through a great sound system. PJB lets you do that. And, you'll learn all about how to do it inside.

So, dive in and have fun!

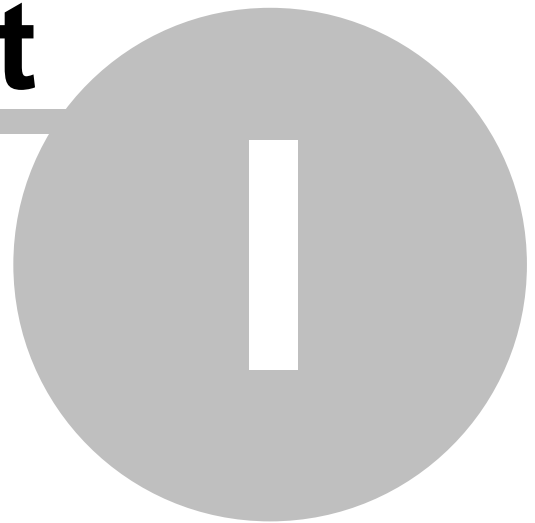




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# Part



# 1 Introduction to Personal Jukebox Server

Personal Jukebox has been created as a server-client system. The [server](#) establishes the Personal Jukebox and creates the list of songs currently on the jukebox. Personal Jukebox (PJB) is NOT play list oriented. It is jukebox oriented. If you are old enough or lucky enough to have seen the classic Wurlitzer or Seeburg jukeboxes of the 1950s and 1960s, you will understand. The jukebox is a machine loaded with records (what disks with songs recorded on them were called before there were CDs). Each record contained two songs--one on the "A" side and one on the "B" side. The jukebox had a list of the names of the songs on the records that were loaded on it. For each song there was a button that when pressed would select that song to be played. Originally, it cost a nickel to play one song or you could put a quarter in the coin slot and play six songs.

When a song was selected, the jukebox would pull the record from a stack and place it on the turntable. It would then lower the tone arm onto the record and the song would begin to play. If a song was playing when you made your selection, the jukebox would remember your selection and play it when possible. The jukebox kept a list of selections in the order they were made and played them in that order. However, if you selected a song that had already been selected, the song would only play once in the order that it was first selected.

To put different songs on the jukebox required that you had a key that would open the jukebox giving you access to the inside. Then you could remove some records and replace them with different ones. Of course you then had to update the selection list by the buttons on the front of the machine.

Personal Jukebox was designed around this model. The server is similar to having access to the inside of the jukebox and allows you to establish the songs that are loaded on the jukebox and available to be played by the [client](#). The server also contains the entire Library of songs that you can make selections from to create a [jukebox load](#). Typically, the library is your entire collection of mp3 music.

The Personal Jukebox Client connects to the server and acts as the front of the jukebox from which you can select a song on the jukebox to be played. In general use, only the manager of the jukebox should use the server. The client should be used those simply wanting to select a song to play. The Personal Jukebox does not collect nickels to play a song. Therefore, when no songs have been selected, Personal Jukebox will select one randomly from the current songs loaded on the jukebox and play it.

The closest thing to a play list that PJB offers is the jukebox load. The jukebox load is a subset of the entire library. The jukebox load represents the songs you have selected from the library and placed on the jukebox ready to be played. PJB does not play the songs in the jukebox load in any particular order. PJB makes the songs available to be selected to play. Songs can be selected in any order and will be played in that order. In the original jukeboxes, if no songs were selected to play, the jukebox just sat silent, playing nothing. It wanted money to play anything. PJB, as a convenience when no one has selected a song, will select one randomly from the current jukebox load and play it. It will continue to play randomly selected songs until someone makes a selection to be played.

Note: As of the last production compile of PJB (Build 7.1.0.4), PJB contains new features. A new menu is available named "[Tools](#)". This menu contains three sub-menus that allow you to copy mp3 (song) files to a folder you choose and two sub-menus that allow you to establish your favorite songs. As of Build 8.1.0.15, PJB has an updated menu under "Library Management".

See [Figure 6](#).

## 1.1 Installing PJB

PJB is delivered with a setup program for the [server](#) and the [client](#). Hopefully, when you downloaded PJB, you made a note of where you saved it. Locate it and run the setup by double clicking on it. Select the appropriate installation for the computer (either a client or a server) that you will be using. Of course, you can install both the server and the client on the same computer. The computer chosen as the server should be one that has a hard drive containing your library of music in "[mp3](#)" format.

Song files in mp3 format are available from many locations on the Internet. Personal Jukebox will also read standard audio CDs, [extract the audio](#) and store them to your hard drive in mp3 format. PJB provides [conversion tools](#) that will enable you to convert audio files in other formats (Flac, wma, and OGG) to mp3. One tool converts mp3 format to "wave" files. This is provided so that you can produce a standard CD containing songs from your library (because some CD players will not play songs in mp3 format).

## 1.2 Quick Start

The following will get you started quickly. It will not cover all the features of Personal Jukebox (PJB). To be able to use all the features of PJB, you will have to review the detailed help chapters. NOTE: As of Build 17.0.0.18 PJB contains new features. A new menu is available named "Tools". This menu contains three sub-menus that allow you to copy mp3 (song) files to a folder you choose.

Start PJB (Server). Most likely your Library will be empty. If such is the case, You will see a message to that effect. Click OK to close the message. You will then be presented with a dialog window (*A system window that presents and allows you to select a drive and/or a folder on your computer.*) in which you can select the disk drive and folder that contains your collection of mp3 songs. If your songs are in multiple folders that are not sub-folders or are on different hard drives, pick one of them. You can add the rest of them later. See "[Adding Songs to an Existing Library](#)". If you do not pick a folder that contains mp3 songs or, if you Cancel the dialog, the application will be unable to continue and will close.

If you select a folder that has a large number of .mp3 files, it can take a long time (minutes to hours) to build your library. If you do not want to wait for it to finish, you can use the [Abort](#) button.

After your library is established, notice the following in PJB's Main Window: (Refer to Figure 1)

1. The **Current Jukebox Load**. It will be "Library" if you just loaded the library. When no other jukebox load is available, PJB defaults to the entire library. This is indicated by the text in the drop down combo box at the top. If other jukebox loads are available, one can be chosen using the drop down arrow (*The small triangular shaped arrow usually to the right of the text in a combo box.*) The grid below the current jukebox load is a list of songs in this load.
2. **Status Bar** (bottom of the window) shows the time remaining in the song that is playing.
3. The **Audio Control** tabbed panel in the lower right quarter of the window.
4. The **Menu bar** (*The menu is typically the second horizontal line of text in a window counting from the top.*) at the top of the window just below the **Title bar** (*The title bar is usually the topmost line of text in a window. It typically shows the title of the application. PJB will replace it with the currently playing song title if one is playing.*).

5. The "**Songs Selected for Playing**" panel in the upper right quarter of the main window. This is the play cue.
6. The "**All Available Songs in The Library**" grid (*Grids usually are shown as vertical columns and horizontal rows. The top row is typically the title of the information in the column below it.*) below the jukebox load grid. This is the library grid which lists all the MP3 songs that you have put in your library unless it is filtered. If filtered, it lists only the songs that meet your filter criteria.
7. Notice the blue lines separating the four areas (Jukebox Load, Play Cue, Library and Audio Control). If you place the mouse cursor over the blue lines, it will change to a splitter cursor. You can click on the splitter and drag and drop to change the sizes of the four areas relative to each other. In Figure 1, the top of the vertical blue line has the splitter cursor on it. Look closely and you can see the splitter cursor which is a line with arrows pointing in opposite directions from the middle of it.

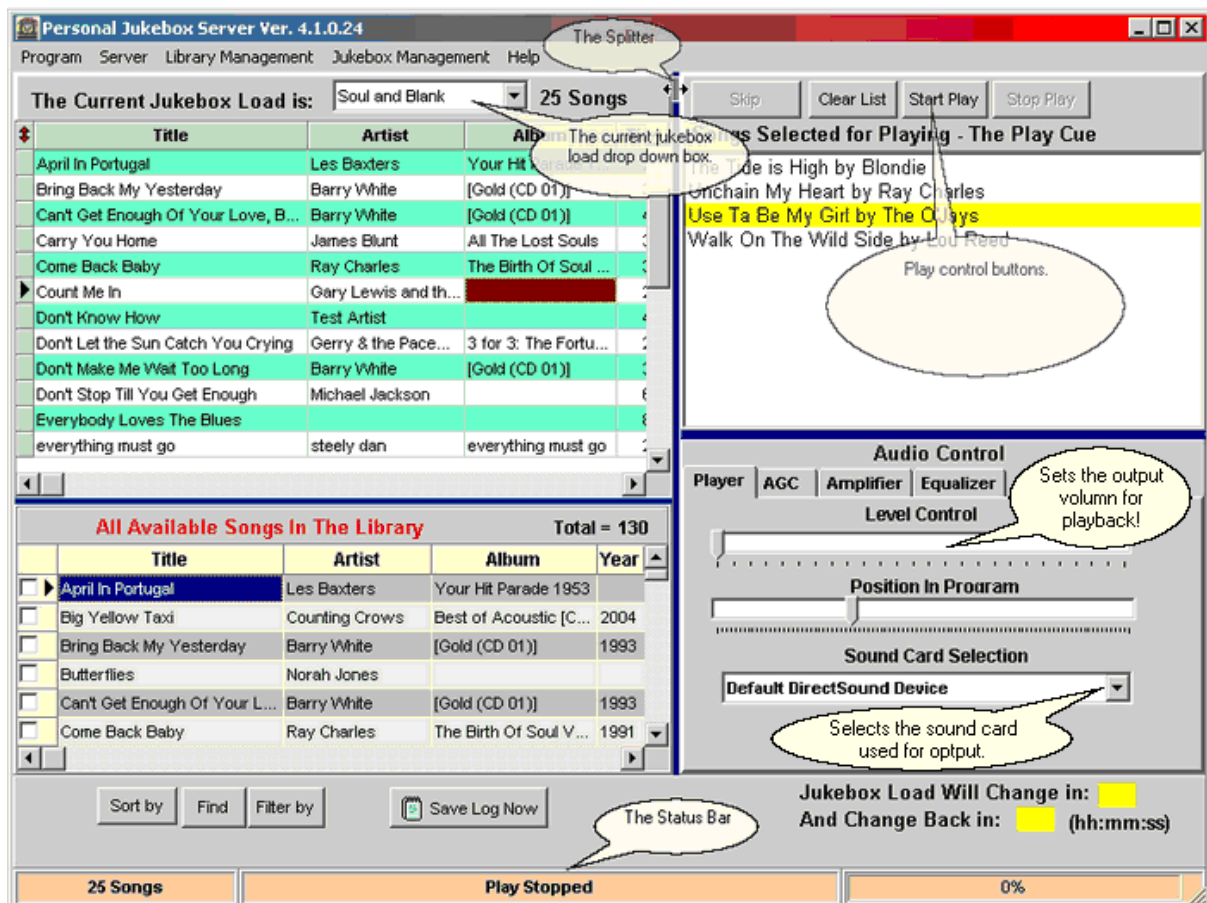


Figure 1. PJB Main Window

If you have just created your Library, the jukebox load defaults to the **entire library**. In other words, the jukebox load grid and the library grid show the same songs. There are a number of ways to create a jukebox load that is a subset of your library. We will discuss only one now. Other methods are covered [later](#). Click the "**Filter by**" button below the library grid. A window (Figure 2) will open.

Field Name:	Condition:	Field Value	Operand:
Genre	IS NULL		Or
Genre	=	Soul	And
	=		And
	=		And
	=		And
	=		And
	=		And
	=		And
	=		And

END.

Clear All   Cancel   Ok

**Figure 2. Setting Filter Criteria**

This is used to filter the library and create a subset of it. Click the drop down arrow at the right of the top most "Field Name". You will see a list that is the same as or similar to the names of the columns shown in the library grid. In Figure 2 above, the library will be filtered to contain only those songs having no entry for Genre (IS NULL) **or** (rather than **And**) having an entry for Genre equal to "Soul". As you can see, you can filter your library in a great many ways. Click **OK** to filter the library according to your criteria.

After filtering your library, you will see a notice above the library grid blinking to remind you that the library grid is filtered and only shows the songs that meet the filter's criteria. Notice also that the large **"Save Jukebox Load"** button is available. Click it and give your new jukebox load a name. Click "OK" and the following happens. Your new load is created and then loaded. This can be verified by checking the currently loaded combo box. Also the **"Save Jukebox Load"** button disappears and the library grid is no longer filtered. **Notice also that the jukebox load grid contains only the songs in your new jukebox load while the library grid still contains all the songs in your library.** You have just created a jukebox load. You can add individual songs from your library to the current jukebox load by double clicking on the song in the library grid. If you try to add a song that is already in the load, you will get an error message.

If you plan to use the PJB Client, you need to set up your **Server** parameters. Do this by clicking on **"Server"** in the menu bar at the top of the main window. If you get an error message to the effect that your server directory is not shared you will need to right click on the directory containing your library database named "Archive.mdb" and select properties. Then select the Sharing tab to complete the task. The particulars about sharing directories are beyond the scope of this document. If you have set up your own [LAN](#), you probably already know about sharing directories. If someone else set up your LAN, you may be able to get help from them. If you don't have a LAN, you will still have to share your database file's directory (folder) if you plan to use PJB Client on the same computer as the Server. If your database is in a shared directory, the window in Figure 3 will open.

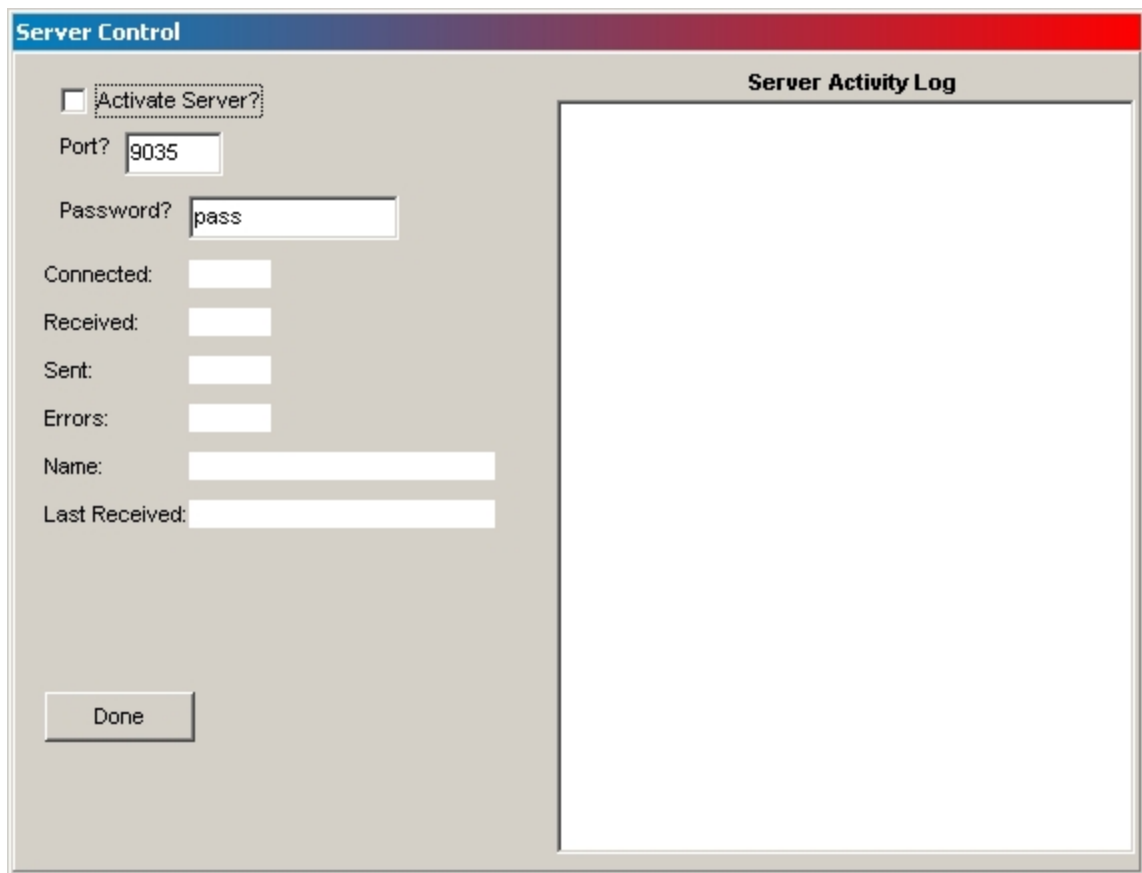


Figure 3.

This is the Server Control panel. You must set the "[Port](#)" and "**Password**" parameters before you can check the "**Activate Server?**" check box. Set the port to a valid port number (ports between 9000 and 9999 usually work). Choose and enter a password. Then, check "Activate Server?". A message indicating server startup will appear in the "**Server Activity Log**" window. The "Connected", "Received", "Sent", "Errors", "Name" and "Last Received" boxes will be filled in when a client connects to the server. They are for information purposes only. Click "Done" to close the window. Now clients can connect to the server if they provide the correct port number and password.

One more thing has to be discussed before you can start playing your songs. Look at the "Audio Control" panel shown in Figure 4..

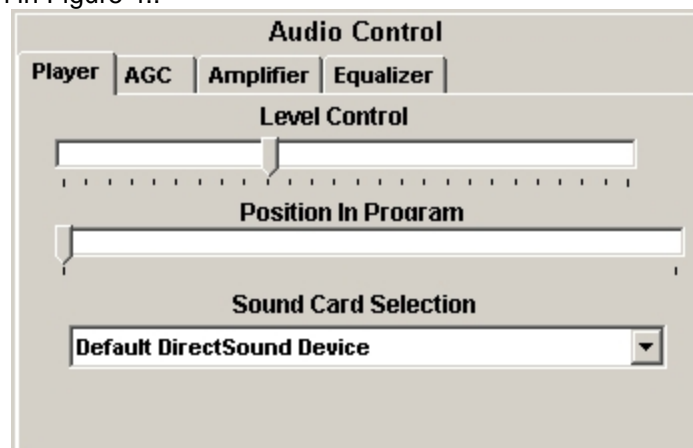


Figure 4.

Only the **"Player"** tab will be discussed here. The other [tabs](#) will be discussed in detail later. The items of interest here are the **"Level Control"** and the **"Sound Card"** selection. The level control is essentially your volume control. The minimum level is far left and the maximum level is far right. It can be adjusted at any time. Most PCs have only one sound card and only that sound card will appear in the drop down list. However, your PC may have more than one sound card. PJB allows you to pick the sound card you want your songs to use. You may want to use one sound card exclusively for PJB and another for Windows sounds. Of course, to do this, you must have more than one sound card installed in your computer. PJB will default to the default sound card if you do not pick one.

Finally, you get to pick and play songs. Select songs you want to play as follows. Go to the current jukebox load grid (see Figure 1) and double click on several songs that you want to play. When you double click on a song, it will be added to the **"Songs Selected for Playing"** window. This window is the [Play Cue](#). If you don't want to select songs, just click the **"Start Play"** button (upper right of Figure 1) and PJB will select songs for you and start them playing. If you have selected songs, clicking **Start Play** will start playing the songs you picked. If all the songs you picked have been played, PJB will randomly pick songs to play from the current jukebox load. PJB will not pick songs to play from the library. The **Stop Play** button will do just that. The **Clear List** button will clear the play cue (the Songs Selected for Playing) window. The **Skip** button, if enabled via the [Program/Options](#) menu, will skip the song currently being played and start the next song in the cue.

Well, you are on your way to listening to your music your way. This may seem difficult at first. But, it becomes second nature quickly. Read [Using Personal Jukebox](#) to get you started.

## 1.3 Uses for Personal Jukebox

This will discuss some of the ways Personal Jukebox (PJB) can be used.

If you are running PJB on a computer, it will play the selected songs through your computer's sound facility. Desktop PCs typically have a sound capability built in but, to use it you must connect speakers to them. Speakers to be used with desktop computers are usually equipped with a built in amplifier and come with a power supply to power it. The sound is output from the computer via an 1/8" stereo jack located on the rear of the computer. Computer speakers typically have a 1/8" stereo plug that plugs into the jack on the rear of the computer. Laptop computers usually have built-in speakers but, they also have a sound output jack that will feed external speakers or sound systems.

PJB was actually designed to be used on a Local Area Network (LAN) to drive a low power FM stereo transmitter. The server is installed on one PC. The output of the sound card on that PC is connected to the input of the FM transmitter. Then whatever selection is played by the server is transmitted by the FM transmitter. You can then tune your Hi Fi Tuner (or any FM radio) to the FM transmitter's frequency and hear the song being played. The client is then installed on a second computer that is connected to your wired or wireless Local Area Network (LAN). The client PC can then be used it to make selections to be played. Consider this scenario. You have PJB running. You are hosting a small party and you have an FM tuner connected to good quality audio equipment. You have a laptop computer setting near your audio equipment running PJB client. Then you tell your guests that they can select their favorite songs to be played simply by double clicking on the song's name. You have, of course, prior to your party, created a jukebox load on the server that suits your party and your guests.

PJB can also be used to play songs directly into any sound system. The output of the sound card

on the PC running PJB is connected to the input of the sound system using a standard cable. This cable has a 1/8" stereo plug to plug into the PC sound card output on one end and two "RCA" type plugs on the other end to plug into the sound system amplifier left and right audio inputs on the other end. This same cable can also be used to connect to almost any high quality, Hi-Fi amplifier/receiver.

Please read the topic [Using PJB with FM Transmitters](#) for more information and a pictorial diagram.

If you are interested in low power FM transmitters, visit [North Country Radio](#), <https://wholehousefmtransmitter.com>, or <http://www.ramseyelectronics.com>.

The developer's email is [gbland@nc.rr.com](mailto:gbland@nc.rr.com) and the web site is <http://www.dgb.us>.

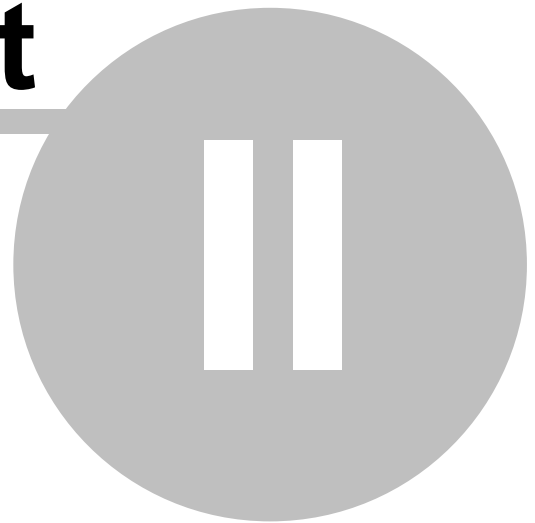


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# Part

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## 2 Managing Personal Jukebox Server

This chapter will cover the basic things you can do with PJB. Things such as adding music to your library, creating jukebox loads, setting options, etc.

### 2.1 Setting Program Options

PJB provides "Hints" that popup on many controls and forms. While very helpful to a new user, they can become annoying to an experienced user. The hints can be turned off by selecting Program/Show Hints? in the **menu bar**. When there is a check mark by "**Show Hints?**" the hints will be shown. Click it to remove the check mark and the hints will no longer be shown. Another click will turn the hints back on. Hints can also be turn on or off by pressing Ctrl+H on the keyboard. Your choice of showing hints or not will be remembered from the last session when you start PJB.

PJB offers a number of operational options. In the menu bar select Program/Options. The window in Figure 5 will appear.

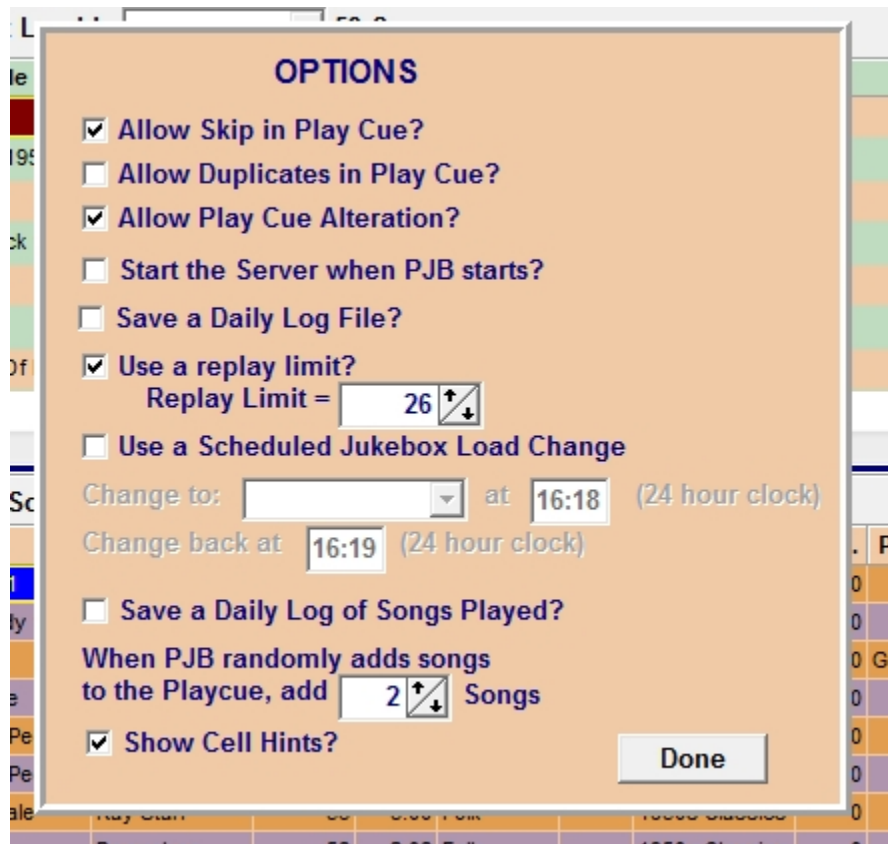


Figure 5.

Each of the options will be discussed in detail in its own subchapter. Please refer to Figure 5 while reading those details. PJB saves your option choices between sessions. So you can set them

once and they will be the same each time you start PJB.

### 2.1.1 Allow Users to Skip the Current Song

The old jukeboxes often had a concealed "**Skip**" or "Cancel" button. Pressing the button would stop the current song from playing and go to the next song in the play cue. This button was not available to paying customers and was used when maintenance was being performed on the jukebox. PJB offers a similar [option](#). Placing a check in the **Allow Skip in Play Cue** box will make a **Skip** button available. It makes the **Skip** button available in both the server and the clients. If you do not want your guests to be able to skip songs that someone else might have selected, uncheck the box.

### 2.1.2 Playcue Duplicates

The original jukeboxes would only keep one instance of a song in the play cue. In other words, no matter how many times a song was selected before it played, it would only play once. If you do not allow duplicates in your play cue by leaving the **Allow Duplicates In Play Cue** box unchecked, then PJB operates the same way. However, PJB offers the [option](#) to allow duplicates by placing a check mark in the box. Doing so will allow a song to be played as often as it is selected.

### 2.1.3 Playcue Alterations

If you leave the "**Allow Play Cue Alteration**" option unchecked, neither the server nor the client PJB will allow any changes in the order of the play cue. Songs will play in the same order in which they were selected. This is the way the original jukeboxes operated. Placing a check mark in the box will allow PJB's server and client to change the order in which the selected songs will play. To change the play order, click and drag a title in the **Songs Selected for Playing** window to the position where you would like it to play. Obviously, you cannot change the play order of the song already playing. (Note: The window is the play cue.)

### 2.1.4 Start the Server with PJB

If you place a check in the **Start the Server when PJB Starts** [option](#) box, PJB will attempt to start the server when it starts. If the folder where PJB is located is not shared, you will get a message to that effect and the server will not start. If there is no check in the box, the server will not start until you start it manually.

### 2.1.5 Daily Log File

PJB can save a log file at midnight each day if a check mark is placed in the **Save a Daily Log File** [option](#) box. The log file will contain errors that occurred such as corrupted files, files that could not be found, songs that did not start playing in a timely fashion and others. The file will be saved in the same folder where PJB is located. It will be named by the year, month, day and time.

(yyyy-mm-day hh-mm-ss.log). If you do not want to save a log file, leave the box unchecked.

A log file can be manually saved anytime by clicking the **Save Log Now** button at the bottom of the main window.

There are other log files saved for trouble shooting purposes. They are also located in the same folder where PJB is located. One is named "NoPlay yyyy-mm-dd.log". This log file simply list files that were selected but failed to play. Another file saved is named "Played On yyyy-mm-dd.csv". This file is in comma separated values (CSV) format and can be loaded into or opened by Excel. It list each song that was played on that day.

### 2.1.6 Replay Limit

A replay limit is defined as follows: When PJB is playing songs randomly for a long period of time, it is theoretically possible for PJB to "randomly" select the same song many times. This could result in hearing the same song over and over. PJB will can limit how often a song is randomly placed in the play cue. This is established by setting the **Replay Limit** [option](#). The replay limit can only be set when there is a check in the **Use a Replay Limit** box. The replay limit minimum is 1. The limit maximum is set to 2/3 of the number of songs in the current jukebox load. This is necessary to ensure that PJB has at least 1/3 of the songs in the jukebox load to add to the play cue. The list of played songs used to prevent a song from being placed in the play cue is internally maintained. The maximum number of songs in the list is equal to the replay limit. If a selected song is not in the list it is added to the play cue and to the bottom of the list of played songs. If the list has exceeded the replay limit, the topmost song is removed from the list. The result is that a song will reside in the list and be unable to be randomly added to the play cue for the number of selection cycles that equals the replay limit.

If you do not want to use a replay limit, leave the box unchecked.

### 2.1.7 Jukebox Load Change

PJB provides a unique [option](#)--the Jukebox Load Change. If you place a check in the **Use a Scheduled Jukebox Load Change**, the **Change to**, **At**, and **Change Back At** edit boxes will become available. This will allow you select a jukebox load from the drop down box and a time for PJB to change to that jukebox load. You can also enter a **Change Back at** time for PJB to return to the original jukebox load. In both cases the time is based on a 24 hour clock. For example 20:00 would be 8:00 PM in the evening while 8:00 would be 8:00 AM in the morning.

PJB continues playing songs from the current jukebox load until the **Change to** time is reached. At that time PJB will change the jukebox load to the load you have selected. At the **Change Back** time PJB will change the jukebox load to the load being used before it automatically changed. PJB will continue making the changes at the proper times until you make changes or uncheck **Use a Scheduled Jukebox Load Change**.

Of course, it makes no sense to do this if you only have one jukebox load nor does it make sense to change to the same load you are changing from. In fact, PJB will not allow you to do that.

### 2.1.8 Random Number of Songs Added to Playcue

When PJB plays all the songs that have been selected, it will default to randomly selecting songs from the current jukebox load. You can set the number of songs that PJB adds by adjusting the spin edit [option](#) control following the "**When PJB randomly adds songs to the Playcue**". The minimum number is of course 1. The maximum number is 10 unless the jukebox load only contains a small number of songs. If such is the case, the maximum number may be less than 10.

### 2.1.9 Save a Daily Log of Songs Played

Checking this option will cause PJB to save a log of songs played each day. The log is saved as a Comma Separated Values (CSV). The file name, on your hard drive, will be "**Played On yyyy-mm-dd.csv**" where yyyy-mm-dd is the year, month and day. The suffix ".csv" identifies the file as a CSV file and can be opened with Microsoft Excel and other spreadsheet programs. Removing the check from this option will prevent the daily log file from being saved. Each night at midnight the file for the previous day is saved and a new file for the current day is created. If PJB is closed and reopened the file for the current day is continued.

### 2.1.10 Show Cell Hints

When "Show Cell Hints" is checked and the data to be displayed in a column is wider than the column, a hint will display the entire contents of the data. If it is not checked, the column displays as much of the data as possible with an ellipsis (...) at the end of it to indicate that the entire amount of data cannot be displayed. Some users find the hint annoying while others find it helpful. This option provides you with a choice.

## 2.2 Activating the Server

If you plan to use the PJB Client, you need to set up your **Server** parameters and activate it. Do this by clicking on "**Server**" in the menu bar at the top of the main window. If you get an error message to the effect that your server directory is not shared you will need to navigate to the directory containing your library database named "Archive.mdb", right click on the folder icon in the upper left corner and select "Sharing and Security..." to complete the task. The particulars about sharing directories is beyond the scope of this document. If you have set up your own LAN (Local Area Network), you probably already know about sharing. If someone else set up your LAN, you may be able to get help from them. If your database is in a shared directory, the window in Figure 3 will open.

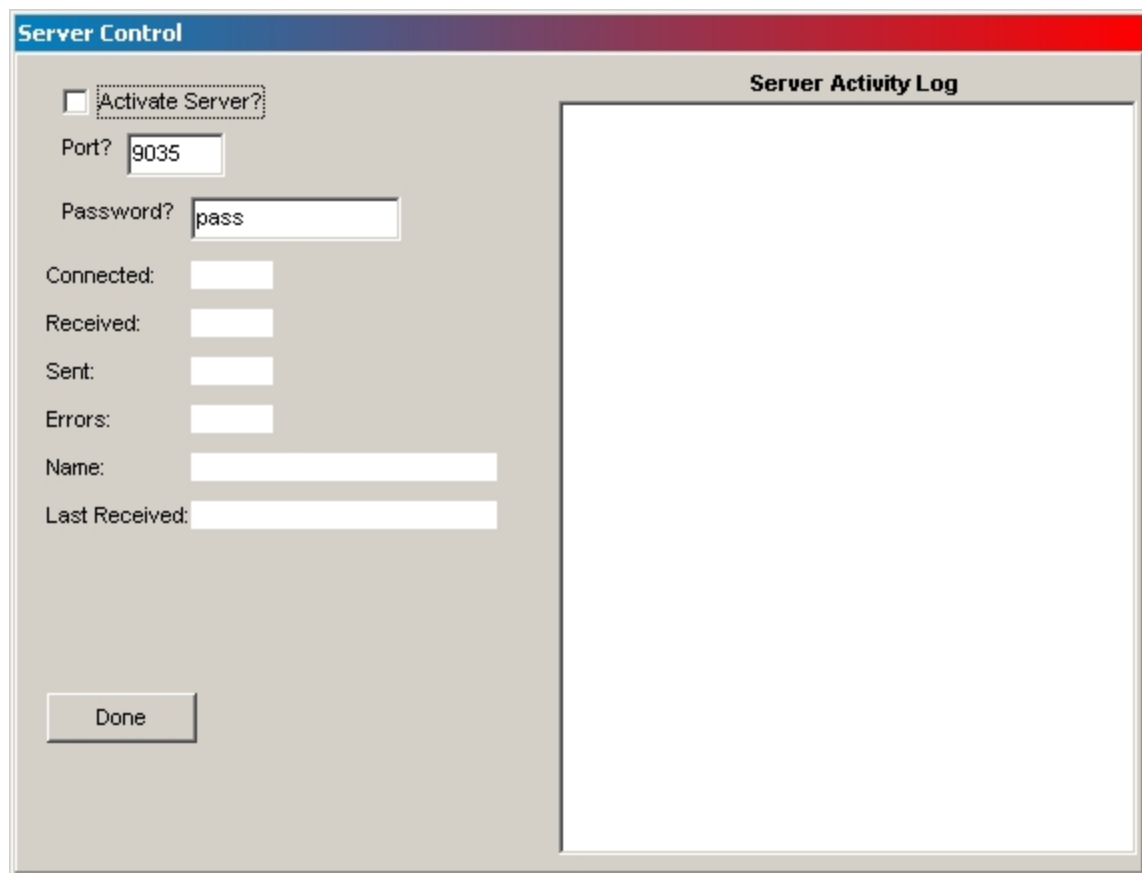


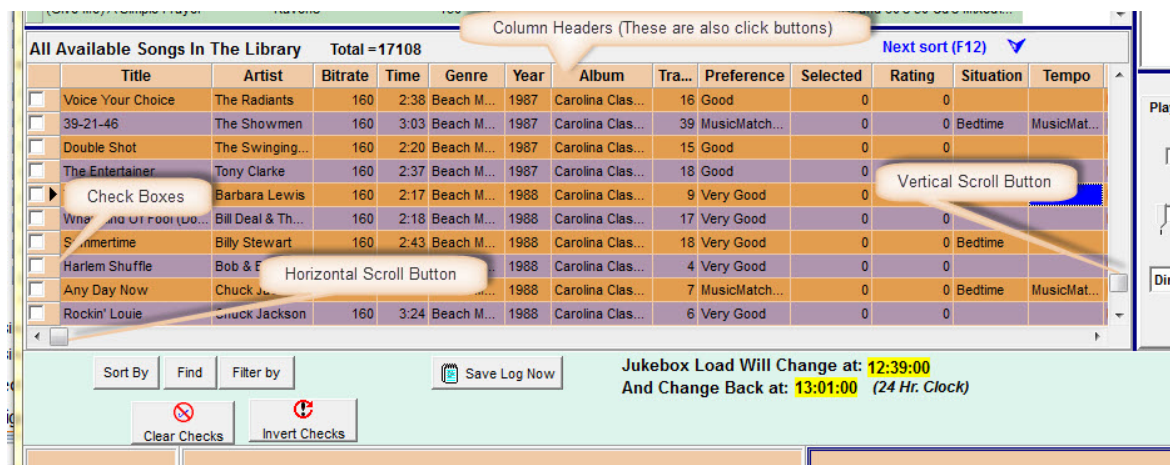
Figure 3.

You must set the "**Port**" and "**Password**" parameters before you can check "**Activate Server?**" Set the port to a valid port number (ports between 9000 and 9999 usually work). Choose and enter a password. Then, check "Activate Server?". A message indicating server startup will appear in the "**Server Activity Log**" window. The other boxes will be filled in when a client connects to the server. They are for information purposes only. Click "" to close the window. Now clients can connect to the server if they provide the correct port number and password. See PJB Client help for information on using it.

## 2.3 Managing the Library

The entire contents of your library of music is shown in the grid (the Library Grid) below "**All Available Songs In The Library**" unless the library is [filtered](#). Management of your library is explained in the following subjects.

The Library Grid has as many rows as you have songs in your library or, if it is filtered, the number of rows equal the number of songs that meet the criteria of your filter. The Library grid columns represent the fields in your database of songs. There is more about database fields below. The library grid is shown in the example below.



The Library Grid

The Library is displayed in a conventional grid. Each row in the grid is applicable to one song (file). Along the left side are check boxes used to select songs for various processing. There is a Horizontal Scroll button and a Vertical Scroll button. Place the mouse cursor on the Horizontal button and hold down the left mouse button and drag left or right to see all the columns in the grid. Place the mouse cursor on the Vertical button, hold down the left mouse button and drag up or down to see all the rows (songs) in the grid. The Column Header buttons offer a convenient and quick way to sort the rows in the grid. Click on any Column Header to sort the grid based on that column. Notice the "Next sort" arrow to the right and above the Column Headers. If it points down, the next sort will be descending (highest to lowest). If it points upward, the next sort will be ascending (lowest to highest).

**A more detailed discussion of database fields.** A database field is a piece of information about an entry (song) in your database. Your music database includes the following fields:

Field Name	Field Description
Title	The title of the song.
Artist	The artist performing the song.
Bitrate	The bitrate used to compress the song. Higher bitrates yeild higher quality but, larger file sizes.
Time	The length of time it takes to play the song.
Genre	A category for the song. i.e. Jazz, Rock, Soul, etc.
Year	The year the song was published.
Album	The name of the album containing the song.
Track	The track number on the album.
Preference	Your preference for the song. i.e. Poor, Fair, Good, Very Good, Excellent.
Situation	The situation in which you would usually play this song. i.e. Holiday, Party, etc.
Tempo	i.e. fast, slow, moderate, etc.
Mood	i.e. Romantic, Happy, etc.
Comment	Notes and opinions.
Path	The location of the song file on your computer. See the discussion of paths below.
Album Artist	The dominate artist on the album.

Composer	The song's composer.
Disk	The disk number in a multi-disk album.
Conductor	Orchestra or Symphony conductor.
Publisher	The album's publisher
Selected	This is the number of times the song has been manually selected to play from a jukebox load.
Rating	A calculated preference rating of the song based on a number of factors.

Do not confuse database fields with "tags". Tags are actually a part of the song file. They are appended to the music part of the file. The tags are included as fields within the database. However, the database has fields that are not tags from a song file. The "Filter" facility in PJB allows you to filter your database on the fields listed above.

### Paths:

The path field in the database is not a tag. It contains the location of the song file PJB found when you created your library. A typical path is: `Q:\Music\Jimmy Smith And Wes Montgomery\The Jimmy & Wes The Dynamic Duo\Baby, It's Cold Outside - 05.mp3`. To understand what this means, you need to understand how Windows stores data on disk drives. *This includes hard drives, external drives, network drives, thumb or flash drives, CDs, DVDs and floppy drives.* The letter preceding the colon (:) is used to identify the drive. "A" and "B" have been designated as floppy drives since the MSDOS days when any other type of drive was rare. When hard drives became widely available, the operating system was usually installed on the hard drive which was assigned the next letter "C". DOS and subsequently Windows provide the 26 letters of the alphabet to assign to drives. If you have a CD/DVD drive or a second hard drive, it is likely the "D" drive. In other words, if you have a second hard drive in your computer and it contains all your songs, the first letter in the path for each song could be D followed by the colon (:) i.e. D:. You may ask, "What is all the rest of that stuff in the path above?". Disk drives are essentially very large file cabinets. I use the following analogy to visualize this.

Consider the drive to be a building that houses nothing but files. In our example above the building is "Q:". Buildings have rooms and the rooms in building Q: all contain files. Our building (drive) Q: has a file room (*in computer speak - a file "folder"*) named "Music". In our example above Q: is the drive (file building) and the "\" indicates that we are going into a room (folder) within Q: Here we see a larger number of file cabinets (*in computer speak - "sub-folders"*). We notice one labeled "Jimmy Smith And Wes Montgomery". Since we are in the file room (folder) that contains music, we can guess that this file cabinet (sub-folder) contains music by Jimmy Smith and Wes Montgomery. Notice also that when go into the file cabinet, we signify this with another "\". Next, within the file cabinet (sub-folder) named "Jimmy Smith And Wes Montgomery", we see a file drawer (a sub-sub-folder) labeled "The Jimmy & Wes The Dynamic Duo". Within the file drawer we find a file labeled "Baby, It's Cold Outside - 05.mp3". Ah! Ha!, this is the file we were looking for. When this music collection was organized, a folder named "Music" was created on drive Q: to hold the entire collection of music. Within "Music" a sub-folder was created to hold only music by the artists "Jimmy Smith and Wes Montgomery". Within that folder a sub-folder was created to hold only music on the album "The Jimmy & Wes The Dynamic Duo". In that folder we store the song (file) "Baby, It's Cold Outside - 05.mp3". Now we can always find that song with the path; `Q:\Music\Jimmy Smith And Wes Montgomery\The Jimmy & Wes The Dynamic Duo\Baby, It's Cold Outside - 05.mp3`. Paths are a method for computers to know where a file is located. PJB uses the Path database field to hold that information for each song. When you select a song to play, PJB uses the information in the path field to locate the song on your hard drive and load it to be played.

Creating a scheme for storing thousands of songs will greatly ease the chore of remembering



where your songs are on the hard drive. One such scheme is illustrated below as a suggestion.

D :	Musi c	Artist	Album Title	Song Title
H ar d D r i v e L e t t e r	Any name for the folder holdi ng your music files	The name of the artist(s) performing the music. This folder is inside the folder that holds all of your music. Having a folder for all artists enables you search your music folder for a specific artist.	If the song is on an album, it will be in this folder named the same as the title of the album. This folder is inside the folder named for the artist.	This is the name of the file that is actually the song. This will be inside the folder named as the album title if it is on an album. If not, it will be inside the folder named for the artist.

Hopefully, this will help you organize your music. Organizing your music becomes more and more important as your collection grows to be thousands of songs.

As of version 7.4 build 0.23, There is a new feature to assist in the management of your music library. When you are working in the Library grid or the Jukebox Load grid and have highlighted a cell in the grid, pressing the **F11** key will open the Windows Explorer folder that contains the song for the highlighted cell. This additional feature was prompted by the need to access the song (mp3 file) in Windows Explorer to manage songs at the Windows file level. It is just a quick way to find the song location in Windows.

### 2.3.1 Creating a New Library

Please realize that creating a new library (database) erases the old one. The "Favorite Index" (listed as "Rating in the Library grid) will be lost as well as the number of times the song has been "Selected". However, any jukebox loads that you had previously created will still be available and the songs in them will play unless the path is no longer valid.

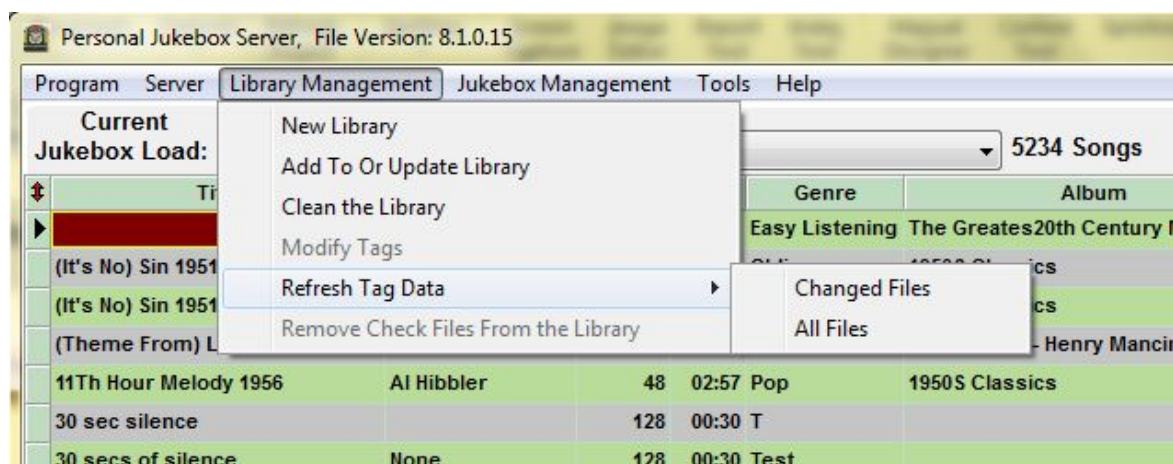


Figure 6.

To create a new library click Library Management/New Library on the menu bar as shown in Figure 6. The following warning will appear. You can also right click on the library grid to get a pop up menu where you can select New Library.

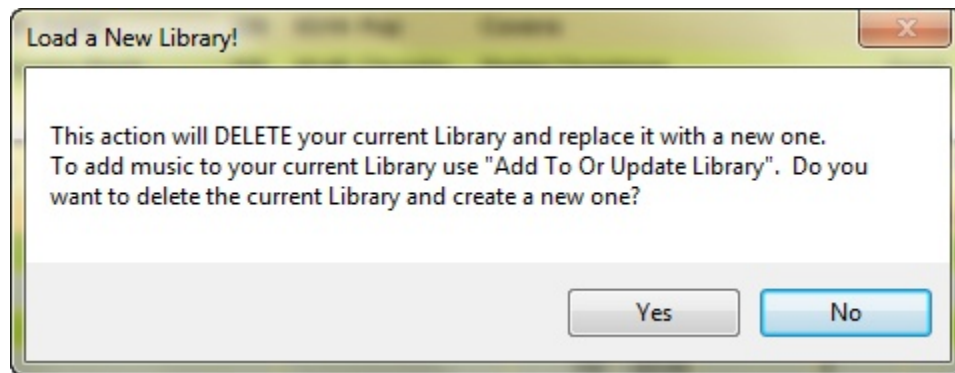


Figure 7.

If you are sure that you want to create a new library, click Yes. The following Load Music dialog box will open.

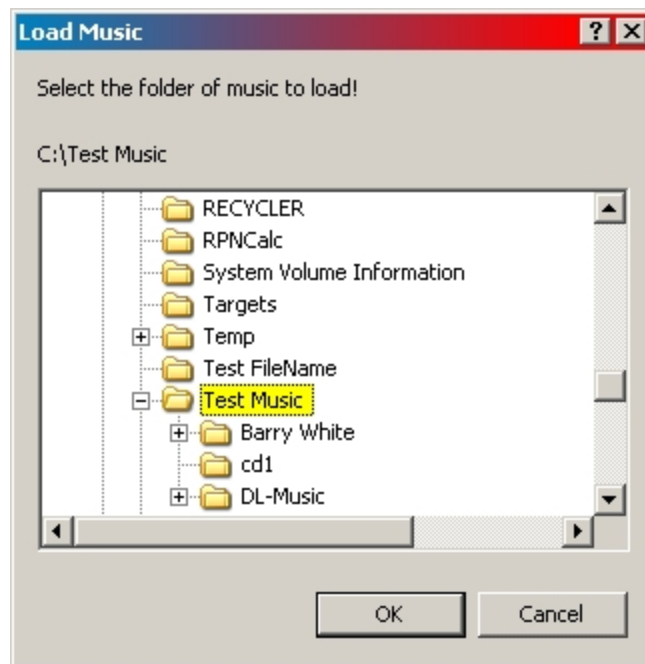


Figure 8.

Select the folder that contains your Mp3 files by clicking on it and, then, click OK to load the songs to your library. In Figure 8 above notice that the folder named Test Music is highlighted. If OK is clicked, all of the mp3 files in Test Music and any sub-folders within Test Music will be loaded. In Figure 8, the songs in Barry White, cd1, and DL-Music will be loaded along with any mp3 files in Test Music. If the folder contains thousands of Mp3 files, loading them can take a long time. The [Abort](#) button will allow you to stop the process. The "Abort" button is covered in the next topic.

### 2.3.2 The Abort Button

For processes that can take a long time, Personal Jukebox provides an Abort button. Click on it to stop most long processes. The process will stop cleanly allowing any changes completed to remain. For instance, suppose you are loading a new library that contains 35,000 songs. You decide after 10,000 songs have been loaded that you want to stop the process. Clicking the Abort

button will stop the process leaving the 10,000 songs already loaded in the library.



**The Abort Button**

### 2.3.3 Check Buttons

At the bottom left of the library grid is a group of buttons. They are shown here:



**Check Buttons**

These buttons deal with the check boxes in the library grid. The "Check All" button will place a check in all the library songs (files) listed. It is only visible when the library is filtered. Only those songs that meet the filter criteria and are displayed will be checked. Otherwise, every song in your library would be checked and actions against checked files such as "Modifying Tags" would be applied to all your songs.

The "Clear Checks" button will remove the check from any song that is checked. The "Invert Checks" button will remove any existing checks and place a check in the box by any song not previously checked.

To check only one song, simply hold down the "Ctrl" key on the keyboard and select that song by clicking on it. To uncheck a single song, hold down the "Ctrl" key and click on the song. To check multiple songs in any location in the grid, hold down the "Ctrl" key on the keyboard while you make your selections. For convenience, you can select a group of songs by selecting one song using the "Ctrl" key and then holding down the "Shift" key on the keyboard, moving to another song several songs away and clicking on it. Doing this will place check marks in the check boxes for all songs between the first one selected and the last one selected.

### 2.3.4 Adding Songs to or Updating an Existing Library

On the menu bar click Library Management/Add to Or Update Library. (Please refer to [Figure 6](#).) You can also right click on the Library Grid and select Add to Or Update Library. This will open a folder dialog box like [Figure 8](#). It will have Add Music in its title bar. Select a folder by clicking on it. Then click OK and the mp3 files in that folder will be added to the Library. If you choose "Library" as your current jukebox load and scan through the songs, you will find the added music. **However, the added songs will NOT appear in any other jukebox loads unless you add them to that load first.**

As of Version 8.1 of Personal Jukebox, this menu selection actually became a Library update function. It begins scanning at the folder that you selected and will scan all its contents including sub-folders. If an MP3 file (song) has changed or is not in the Library database, it is updated or

added to it. The Library database can also contain songs that are no longer on your hard drive. This can happen if you delete it from the drive or move it to another location. To correct this, use "Clean The Library".

### 2.3.5 Removing Songs From the Library

As of Version 8.1.0.15 Personal Jukebox has a facility for removing songs from your library. Reviewing [Figure 6](#), note the menu selection "Remove Checked Files from the Library". Songs can be removed from the library by selecting them with check marks as discussed in [Check Buttons](#). Once you have completed your selections, the "Remove Checked Files from the Library" will be available. Click it and the songs you have selected will be removed from your library. This action does not remove the songs from its source (hard drive, etc.). The songs can added back to the library using "Add to or Update Library".

### 2.3.6 Clean The Library

This menu selection was added to PJB as of Version 8.1. Sometimes you may delete songs from your collection (hard drive, external drive, etc.). This will not remove the song from your Personal Jukebox Library database. If you attempt to play the deleted song, you will get an error message because PJB cannot find the song. "Clean The Library" (see [Figure 6](#)) provides a means of reading your entire database and attempting to find every song in it. If a song is not located, it is removed from the database. Songs that are removed are listed in the log files. This is equivalent to "Validating Paths".

### 2.3.7 Modifying Tags

Tags are data entries attached to mp3 files. They contain information such as Title, Artist and Album. The tags that PJB can manage are:

Tags	Description
Title	The song title.
Artist	The name of the performing artist.
Album	The name of the album, if any.
Year	The year of release (usually the year in which the song was popular).
Track	The track number of the song on the album.
Genre	The general category into which the song falls. Ex. Pop, Folk, Rock, etc.
Pref(erence)	Your personal preference for the song. Ex. Excellent, Very Good, Good, Fair, Poor
Situ(ation)	The situation in which you would hear this song. Ex. Party, Evening, Cocktails, Holiday, etc.
T(e)mpos	The beat speed of the song. Ex. Very Fast, Fast, Moderate, Slow, Very Slow
Mood	The mood set by the music. Ex. Upbeat, Quiet, Background, Dance
Comment	Your personal comments about the song.
Alb(um)Artist	The artist for the album or Various if there are multiple artists on the album.
Composer	The composer of the song.
DiskNum(ber)	Used to identify the disk number in a multi-disk album set.

Conductor	The conductor.
Publisher	The record label.

Table 1. PJB Tags

Most of the tags in Table 1 are conventional and are usually part of an mp3 file. PJB handles some tags that may not be included in some mp3 files. They are provided as an aid to sorting and filtering your collection. Some of them were handled by mp3 players similar to MusicMatch. In particular they are Preference, Tempo, and Mood. PJB adds another, Situation, to assist you in identifying the situations in which you might like to play a song. These additional tags are not supported by ID3v1, the first version of adding tags to song files.

There have been a number of versions of tags. The most prevalent are ID3v1 and ID3v2. PJB supports both but, is biased toward ID3v2. Basically, PJB will attempt to read ID3v2 tags and, if present, ignores IDv1. However, if there is no ID3v2 tag, PJB will attempt to read an ID3v1 tag. When PJB writes tags, it always writes both.

PJB can modify tags in two ways. The first is to modify individual tags. Click on a cell in the Library grid then click the same cell again. (Note: This is two single clicks. If you click twice too quickly, it will be interpreted by Windows as a double click.) The first click will just select the grid row and column. The second click will highlight the contents of the selected cell for editing. All the tags can be edited in this way. The "Path" column cannot be edited because path is not a tag. The path is the location of the song's file on your disk. A discussion of paths is [here](#).

All Available Songs In The Library								Total = 147
	Title	Artist	Album	Year	Track	Time	Genre	reference
<input type="checkbox"/>		Gary Lewis & th...	3 for 3: The Fortune...		0	2:03		
<input type="checkbox"/>	1973	James Blunt	All The Lost Souls	2007	1	4:40	Pop	
<input checked="" type="checkbox"/>	50's Oldies Mix	Various		0000	0	10:14	Rock	Good
<input type="checkbox"/>	After Midnight	Jj Cale	Best of Acoustic [C...	2004	16	2:22	Acou...	Fair
<input type="checkbox"/>	Against All Odds	Phil Collins	Best of Acoustic [C...	2004	3	3:26	Acou...	Fair
<input type="checkbox"/>	Ain't Misbehavin'	Ray Charles	Blues + Jazz 2	2000	0	5:41		Excellent
<input type="checkbox"/>	All Of Me	Harry Connick, Jr.	The New York Big ...	1993	0	8:45		Excellent
<input type="checkbox"/>	Annie	James Blunt	All The Lost Souls	2007	9	3:29	Pop	
<input type="checkbox"/>	April In Portugal	Les Baxters	Your Hit Parade 1953		0	2:45		Excellent

Sort by Find Filter by Save Log Now

Figure 9. Modifying Individual Tags

This technique is most useful when you simply want to correct or update a tag on a single song. If you would, for example, like to change the Preference tag on a large group of songs, PJB provides another way. Notice that there are check boxes on the left side of the Library grid. Place a check in the box next to each song that you want to change tags on. To place a check mark in the box, Hold down the "Ctrl" key and click on the row you want to select. To select a number of songs, hold down the "Ctrl" key and click on the song's name. As long as you hold the "Ctrl" key down, any song that you click on will be added to those which have checks in the check boxes to the left of the song's title. These are called "Selected Songs". You can also select a song, then hold down the "Shift" key and select a different song several songs above or below the song first selected. When you do this, all the songs between the first selection and the last selection will have check marks in the checked boxes. If you hold down the "Ctrl" key and click on a selected

song, the check mark will disappear and the song will no longer be selected.

➔ Just a word of caution about checking songs. Make sure that you are careful not to click in the grid after you have checked a number of songs. Clicking inside the grid will remove ALL your check marks except the one you selected by clicking in the grid. It is upsetting to have checked a large number of songs for tag modification and, inadvertently, click in the grid and then have to check them all over again. **UPDATE:** As of version 7.4.0.20, PJB no longer selects a song simply by clicking on it. You must hold the Ctrl keyboard key down to select a song. You can also unselect (remove the check mark) for a single song by holding down the Ctrl key and clicking on it. Furthermore, selecting a single song NO LONGER REMOVES THE CHECK MARKS FROM OTHER SONGS!

After you have checked all the songs for which you want to modify tags, go to the menu bar and click Library Management/Modify Tags. (Please refer to [Figure 6.](#)) Or, you could right click on the Library Grid and select Modify Tags. (Please refer to [Figure 6.](#)) If you have checked less than two songs you will get an error message. Otherwise, you will see a message indicating how many rows you have selected. Click OK and you will see the following window.

Modify Multiple Tags

Song Title

Select Tags to Modify

- ☒ Artist
- ☐ Album
- ☐ Year
- ☐ Genre
- ☐ Preference
- ☐ Situation
- ☐ Tempo
- ☐ Mood
- ☐ Comment
- ☐ Album Artist
- ☐ Composer
- ☐ Disk Number
- ☐ Conductor
- ☐ Publisher

☒ Select All   Retrieve From File   Save Changes   Done

Figure 10. Tag Modification



The "**Modify Multiple Tags**" window provides a method to modify any of the tags, except the Title, on multiple mp3 files (songs) at one time. Title is not modified because Title is usually specific to a single particular file. Consequently, Title must be modified one file at a time. The **Modify Multiple Tags** window is used as follows: Select the tag or tags that you want to modify by placing a check in the box next to them. When there is a check by the tag, the edit window to its right is enabled allowing you to type in the value you want the tag to have. Clicking the **Retrieve From File** button will load the information from one of the files to be modified. The song title is included just for convenience. Also for convenience, there is a **Select All** button. Clicking it will place check marks in all the tag check boxes. It then becomes an **Unselect All** button. Some of the tag edit boxes are drop down boxes. If there are no selections to be dropped down, you can add one. Simply type it in the edit area of the drop down box. The next time you come back to it the values you have entered will be available in the drop down.

After you have entered all your changes click the **Save Changes** button. If you are changing the tags on a large number of files, an **Abort** button will appear. Clicking it will abort the operation. However, the changes made before the abort will be permanent. When storing your changes, PJB will only store changes to tags that have checks by them. It will not alter the tags that have no checks.

Once the changes have been saved the Done button can be clicked to close the window. If you have made changes and have not saved them before you click the Done button, you will get a warning and be offered the choice to close the window without saving changes or the choice to avoid closing the window giving you the opportunity save your changes.

When the window closes you will be returned to PJB's main window. After you return to the main window, the songs you have checked will still be checked. This will allow you to perform another operation on them without having to select them all over. If you are finished, you can clear the checks by clicking "Clear Checks".

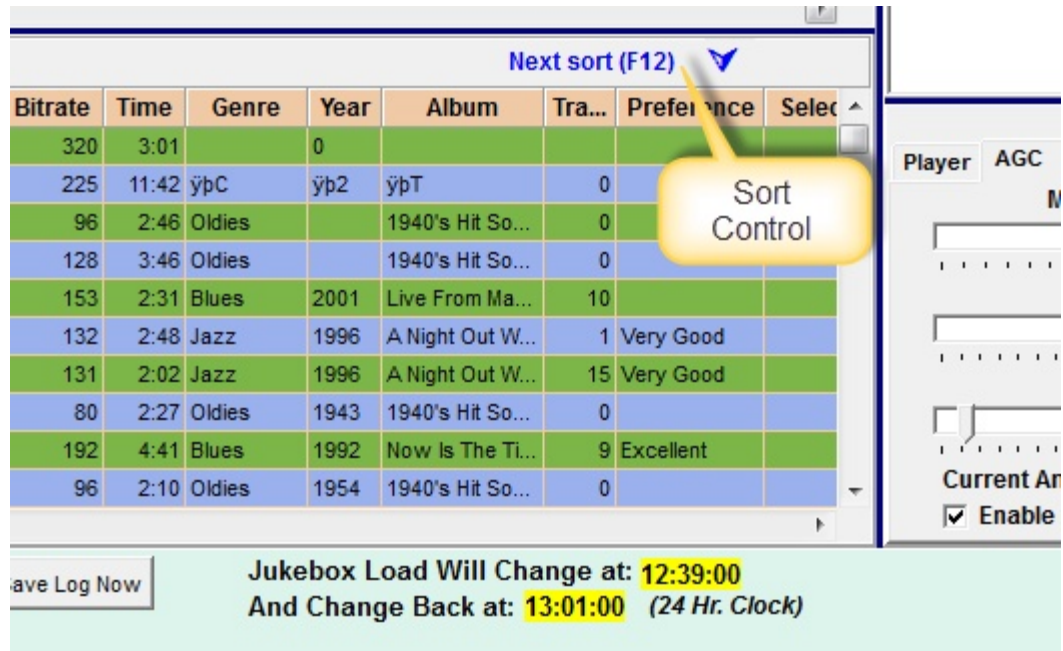
### 2.3.8 Refreshing Tag Data

There are many tag modifier applications available. If you use an application other than PJB to modify the tags on your mp3 files after you have created your library, PJB will not contain those changes. If you modify tags outside of PJB and want to include those changes in your PJB library, you can use Refresh Tag Data to do so. On the menu bar click Library Management/Refresh Tag Data. Or use the pop up menu by right clicking in the Library grid. (Please refer to [Figure 6.](#)). Refresh Tag Data offers two options. The first (All Files) is to refresh all files in the selected folder whether they have been changed or not. The second (Changed Files) will refresh only those files in the selected folder that have been changed outside of PJB. Either selection will open a folder dialog box like [Figure 8](#). Select the folder that contains the mp3 files that that you want to refresh. Depending on your menu selection, All or only Changed mp3 files in that folder and its sub-folders will be read and updated in PJB's library.

While this will update the tags on songs in the library, it will not update the tags associated with songs listed in any Jukebox Loads that you have created. Please see [Update Load Tags](#).

### 2.3.9 Sorting the Library (Sort)

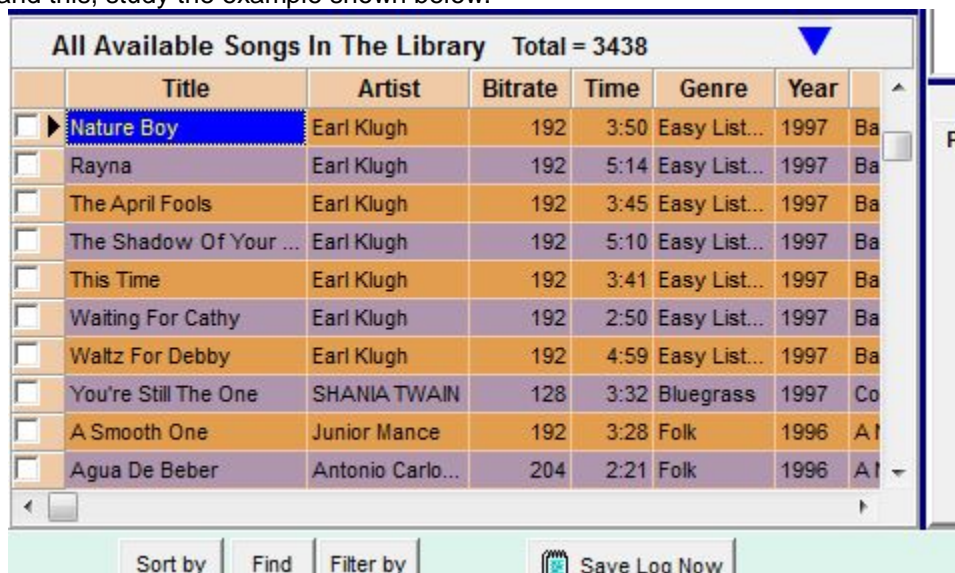
PJB allows you to quickly sort any column in the Library by simply clicking on a column heading. There is a blue arrowhead to the right of the Library grid header that points either up or down. This is shown below:



### • Column Sort Arrow

The direction of the arrowhead indicates the direction of the next sort. The direction of the arrow can be changed by pressing the "F12" key on the keyboard or by clicking "Next Sort". When the arrowhead points down, clicking on a column heading will sort that column descending. In other words, from highest value to lowest. If the arrowhead points up, the column will be sorted from lowest value to highest. Clicking on any column heading except "Title" will also sort the "Title" column within the column heading on which you clicked.

To understand this, study the example shown below.

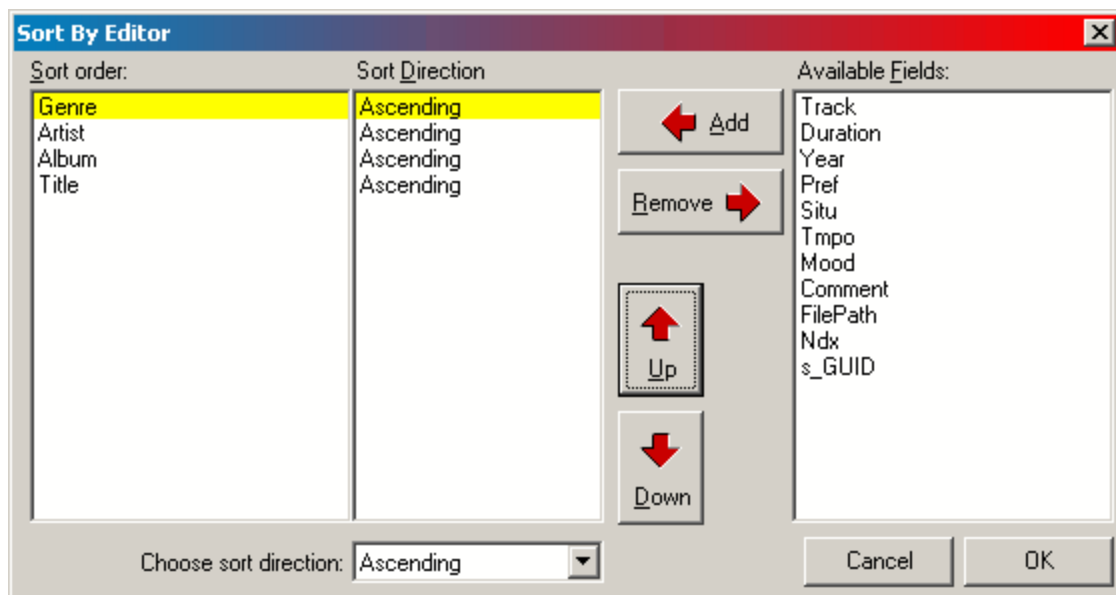




### • Sort Example

In this example, the column heading "Year" was clicked. Notice that the values in the year column go down in value from top to bottom (1997 to 1996) because the sort arrowhead pointed down. Also notice the "Title" column. In it the song titles are sorted ascending (from low to high). When the year changes from 1997 to 1996, the "Title" sort starts over. In other words, the song titles are sorted ascending within the year. When clicking on a column heading other than "Title", the song titles are always sorted ascending within the values of the column heading which you clicked.

You can also view your library any way you like by using the "Sort By" facility. There is a **Sort By\UnSort** button at the bottom of the Library Grid. When it is titled **Sort by** and clicked, it will open the **Sort By Editor** window shown in Figure 11.



**Figure 11. Sort By Editor**

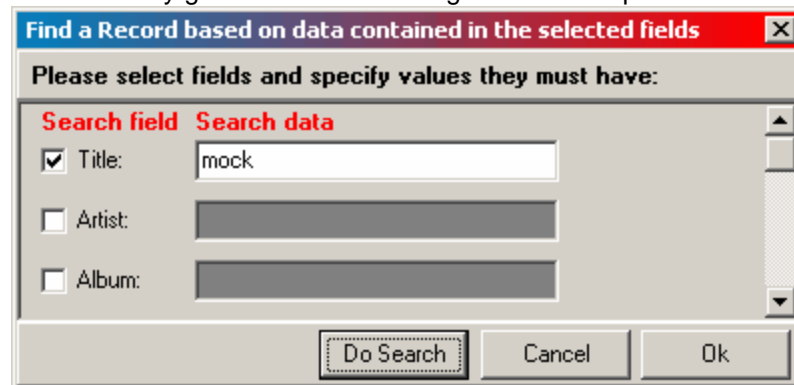
Available fields on which you can sort are shown in the **Available Fields** box on the right. Fields already used are shown in **Sort order** box on the left. To move a field, highlight it and click **Add** or **Remove**, whichever is appropriate. To change the order of fields in the Sort order box, highlight the field and click **Up** or **Down** to move it. The **Sort Direction** (Ascending or Descending) can be set for each field in the Sort order box by selecting the field and choosing the direction from the drop down choices. In the example above, your library will first be sorted by Genre, then Artist within Genre, then Album within Artist and, finally, Title within Album. If the library is filtered and sorted as above, the sort pattern will be applied to the filtered records. Sorting and Filtering can be a great tool to build custom jukebox loads.

When the Library is sorted, the button will be labeled **UnSort**. This is an indication that the Library is sorted and can be unsorted by clicking the button. Doing so will remove all sorting parameters from the library.

### 2.3.10 Searching the Library (Find)

There are always numerous reasons to want to locate a song in your library. You may want to add it to your current jukebox load by double clicking on it or you may just want to check its tag values. PJB provides a way to find the song you want to locate. You can **Find** a song if you know at least

the first part of the value of one of the fields such as Title, Artist, etc. To Find a song click on the **Find** button below the Library grid. The window in Figure 11A will open.



**Figure 11A. Find a Record**

PJB searches beginning with the currently selected record. In the example above PJB will locate the first record after the currently selected record, beginning with the letters "mock". **Do Search** finds the first matching record and, if clicked again, will find the next matching record. **Do Search** treats the library as circular. If you keep clicking **Do Search**, the record found will eventually be the first one you found. **OK**, when clicked, will find the first matching record and close the window. Capitalization of letters does not matter. If **OK** is clicked after **Do Search** is clicked, the library selection will remain on the record found by the previous **Do Search** click.

Other search fields can be made visible by using the scroll bar on the right of the window. Basically, to find a song, select a field, enter search data, click **Do Search** until you see the song you want and, then, click **OK**.

### 2.3.11 Filtering the Library

The library is filtered by clicking the "Filter by" button below it. Please read the topic [Using a Library Filter to Create a Jukebox Load](#) for details on using the filter window.

### 2.3.12 Playing a Song Using Window's Default MP3 Player

Sometimes you may want to hear what a song sounds like without playing it through PJB. In other words, you just want to monitor a song before you put it in a jukebox load. You can do this by selecting the song in the **Library** and clicking the left mouse button while holding down the ALT key. The song the cursor is currently on will play using Window's default MP3 player. The sound device used will be Window's default sound device. If PJB is playing and is using the Window's default sound device, this feature will not work. This will always be the case if your PC has only one sound device (card). If you stop PJB from playing by clicking the Stop Play button, you can then use this feature to play a song from the Library. If PJB is using a sound device other than Window's default sound device, then you can use this feature even when PJB is playing songs. This is another good reason to equip your PC with two sound devices (cards).

## 2.4 Managing the Jukebox Load

The Jukebox Load represents the collection of songs that are taken from your Library and loaded onto your jukebox making them available to be played. If you have created a library, there will be

at least one jukebox load created. This is because the act of creating a library will, by default, create a jukebox load named Library. Also, when a new library is created, PJB loads the Library jukebox load automatically. The Library jukebox load contains **ALL** the songs in your library. The Jukebox Load is presented much like the Library. It is shown as a grid similar to the grid displaying the Library.

PJB's greatest usefulness, however, is in creating smaller jukebox loads consisting of songs selected from the Library that fit a particular situation. Perhaps you are hosting a cocktail party and want the background music to be nothing but smooth jazz. Or maybe you are having a swimming pool party and would like the music to be mostly rock & roll with a few ballads included. You can even create a jukebox load that contains only songs that were popular when you and your significant other met. That's the beauty of PJB. Create a jukebox load to match any scenario. Then, you can select a song from that load or let PJB do the selecting for you. In either case you will hear only those songs you picked for the special occasion. If you are using PJB's companion client on the same or another computer\*, only the songs in the jukebox load will be visible. Now lets find out how to do it.

\* If you have a Local Area Network, PJB can serve Jukebox information over it. For example, suppose you have created a Jukebox Load for a cocktail to be held on your patio. Load PJB Client on a laptop computer and place the laptop in a conspicuous location on your patio. Then start PJB Client on the laptop and it will display the Jukebox Load. Your guest can then double click on any song that they would like to hear and it will be placed in the playcue and played. This assumes that your PJB server is playing the music into the audio system that can be heard on your patio. If PJB server is playing the music into a low power FM transmitter, then any audio system equipped with an FM receiver can be used to hear the music. See "[Using PJB with FM Transmitters](#)".

### 2.4.1 Using a Library Filter to Create a Jukebox Load

**Filter By** capability. In Quick Start the use of the filter capability was covered. It is repeated here for convenience.

Field Name:	Condition:	Field Value	Operand:
Genre	IS NULL		Or
Genre	=	Soul	And
	=		And
	=		And
	=		And
	=		And
	=		And
	=		And
	=		And

END.

Clear All   Cancel   Ok

**Figure 12. The Filter By Window**

This is used to filter the library and create a subset of it. Click the drop down arrow at the right of

the top most "Field Name". You will see a list that is the same as or similar to the names of the columns shown in the library grid. In Figure 12 above, the library will be filtered to contain only those songs having no entry for Genre (IS NULL) **or** having an entry for Genre equal to "Soul". As you can see, you can filter your library in a great many ways. Click **OK** to filter the library according to your criteria. More about "LIKE" and "NULL" (The Condition for a filter can be "=" (Equal to), ">" (Greater Than), "<" (Less Than), ">=" (Greater Than or Equal To), "<=" (Less Than or Equal To), "<>" (Not Equal To), "Like" (Similar To), "IS NULL" (No entry), or "IS NOT NULL" (any entry). Most of these are reasonably clear. However, "Like" and "NULL" need a little more explanation. If the the Condition is LIKE, you can use "\*" and "?" in Field Value. The "\*" will represent any quantity of any character while the "?" will represent any single character. For example selecting "Artist" in Field Name, "LIKE" in Condition and "jones" in Field Value will display any song having any characters up to "jones" and "jones" as the last characters. Therefore, your filter would display Quincy Jones, Jack Jones and any other artist with the last name Jones. The result is not case sensitive. Using "?a\*" would display any artist with "a" as the second letter of their name. Using "\*" and "?" can create almost any filter condition. NULL simply means that nothing (no character at all) has been entered entered into the selected Field Name. In other words, If you select "Genre" in Field Name and "IS NULL" in Condition (Field Value will be unavailable), the filter will display all songs for which no entry has been made in the "Genre" field. Please realize that "space" is a character and constitutes an entry in a field. Songs having only spaces entered will not match "IS NULL". "IS NOT NULL" will display the song if the selected Field Name has any entry -- including spaces.) [Using "Or" and "And"](#).

After filtering your library, you will see a notice above the library grid blinking to remind you that the library grid is filtered and only shows the songs that meet the filter's criteria. Notice also that the large **Save Jukebox Load** button is available. Click it and give your new jukebox load a name. Click **OK** and the following happens. Your new load is created and then loaded. This can be verified by checking the **Current Jukebox Load:** combo box. Also the **Save Jukebox Load** button disappears and the library grid is no longer filtered. Notice also that the jukebox load grid contains only the songs in your new jukebox load while the library grid still contains all the songs in your library. You have just created a new jukebox load. You can add individual songs from your library to the current jukebox load by double clicking on the song in the library grid. If you try to add a song that is already in the load, you will get an error message.

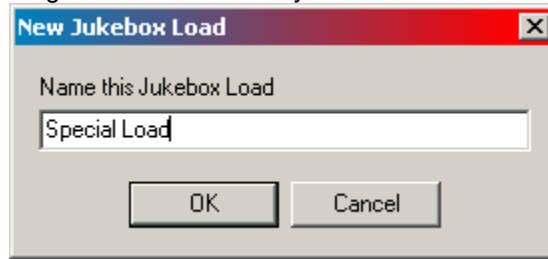
You do not have to create a new jukebox load to use the filter. Just ignore the **Save Jukebox Load** button and work with the library grid, which now shows only the files that meet your filter parameters. Using this technique, you could display only the songs performed by a single artist or display only the songs on a single album. In fact, you can display the songs in your library based on any combination of filter parameters that you can come up with. If you want to remove all the filter criteria, click on the **Clear All** button. The filter criteria will be removed. Then, click **OK**. The window will close, the entire library will be visible in the library grid and the **Save Jukebox Load** button will disappear.

The filter facility can also be used to modify a jukebox load. This is covered in the [Modifying a Jukebox Load](#) topic.

## 2.4.2 Manual Jukebox Load Creation

A **Custom Jukebox Load** can be manually created by going to the menu bar and clicking on Jukebox Management/Custom Jukebox Load. Custom Jukebox Load is also available in the pop-

up menu you get when you right click in the Library Grid. The window in Figure 13 will open.



**Figure 13. Naming A Custom Jukebox Load**

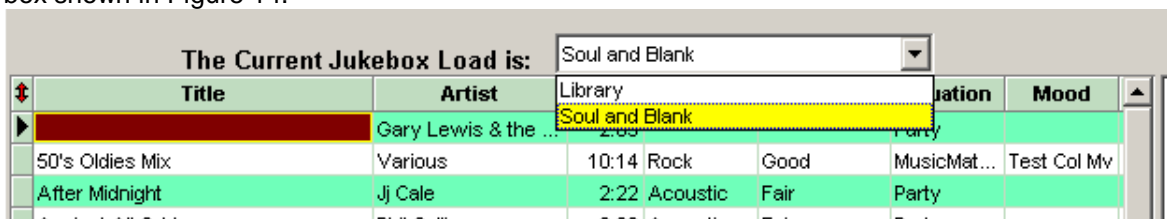
Type in a unique name for your new load and click **OK**. Your new custom jukebox load will become the current jukebox load. However, it will have no songs in it. In other words, the jukebox grid will be empty. Add songs to the new jukebox load by double clicking on songs in the library grid. You can use all the sorting, searching (Find) and filtering methods in the library grid to locate songs that you want to double click on to add them to your custom jukebox load. You can also use the check boxes to select multiple songs. Then use the Add Checked Songs to Current Load feature from the pop-up menu to add your selections to the new jukebox load.

For your new load to be valid, you must add at least 5 songs to it. With less than 5 songs, you will get an error message when you try to **Start Play**.

### 2.4.3 Modifying a Jukebox Load

The extended menu for the Jukebox Load (the double headed red arrow in the upper left is covered in detail in the [Searching, Sorting and Filtering the Jukebox Load](#) topic.

There are a couple of ways to modify an existing jukebox load. **First make sure that the load you want to modify is the current jukebox load.** Do this by using the Current Jukebox Load drop down box shown in Figure 14.



**Figure 14. Current Jukebox Load Drop Down Box**

When the load is selected, the jukebox grid will display the songs in that load. Now you are ready to make changes to it. The easiest way to add a single song to a load is to find it in the library and double click on it. The song you double clicked in the library grid will become a member of the current jukebox load.

To remove a song from a jukebox load, select it by holding down the "Ctrl" key and clicking on it in the current jukebox load and then right click on it. Figure 15 below shows the result of selecting "Basin Street Blue" and right clicking.

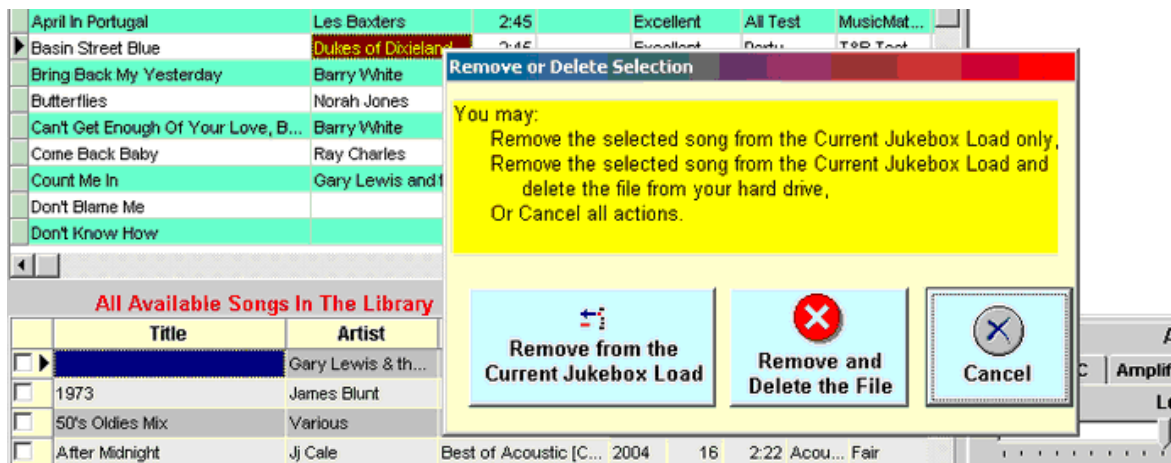


Figure 15. Removing a Song from a Jukebox Load

Your choices at this point are explained in the **Remove or Delete Selection** window. **Remove from the Current Jukebox Load** will remove the song from the load but it will still be in the Library and on your hard drive. **Remove and Delete the File** will, not only remove the file from the current load, it will also delete the file from your hard drive where ever it is stored. A warning message will appear like figure 16 giving you a second chance to actually do it or not.

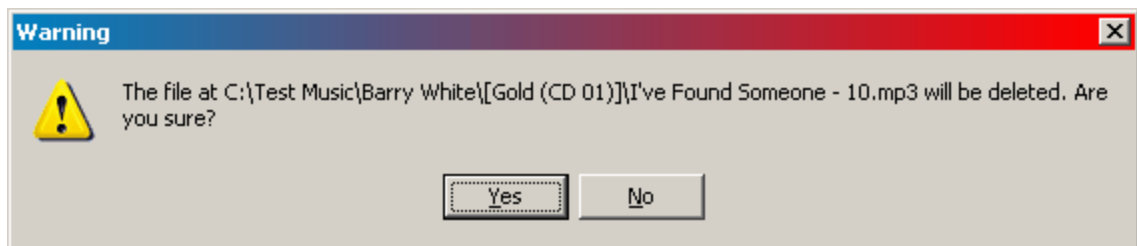


Figure 16.

Clicking **Yes** will do it, clicking **No** will cancel the operation and close the windows. Be careful. If you delete the song from its storage location (hard drive), it cannot be recovered. In Figure 15 above clicking **Cancel** will close the window and leave the song unchanged. You may ask why there is a facility to completely delete a file. Perhaps the song is incomplete and stops playing before its end. So, you want to delete it and maybe replace it with a complete version.

You can also use this feature to remove or delete several songs at once. You can select multiple songs by holding down the Ctrl key and clicking on the songs you want to remove or delete. A black dot will appear to the left of the songs you have selected. Right click in the grid and you will see the choices in Figure 15. You can clear your selections by clicking on the vertical red arrow in the upper left corner of the jukebox grid (see [Figure 18](#)) and selecting **Deselect All**. You can also **Select All** songs in the same manner. **Be careful with this. You could select a large number of your songs and DELETE them permanently from your hard drive. If you are wise, you will have backed up all your songs to a safe location anyway.**

If you delete a song from your hard drive, it will be removed from the current jukebox load and from the library. It may not, however, be removed from other jukebox loads. You can correct this by validating the other loads (see [Validating Paths](#)).

You can use a [filter](#) to modify a jukebox load. Click on "**Filter By**" and select the parameters of your filter. Click **Ok** to close the filter window. The library is filtered and the **Save Jukebox Load**

button appears. Click the **Save Jukebox Load** button and, when asked to name your load, type in the name of the existing jukebox load that you want to modify. The window in Figure 16A will open.

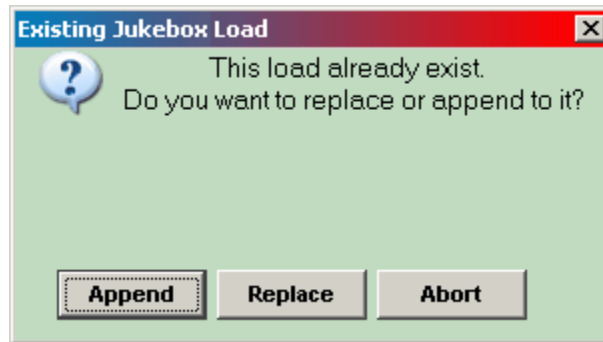


Figure 16A

Here you have the opportunity to **Replace** the load, **Append** to the load or **Abort** the operation. If you select **Append**, all the songs shown in your filtered library will be added (appended) to the jukebox load you named. If you want to add only selected songs to the current jukebox load, don't use this method. Use the [Add Checked Songs to Current Load](#) feature instead. Selecting **Replace** will delete the previous jukebox load and replace it with the songs in your filtered library. Either way you have modified an existing jukebox load. **Abort** cancels the operation without making any changes.

#### 2.4.4 Adding Checked Songs to the Current Jukebox Load

This feature is only available in the pop-up menu that you see when you right click in the Library Grid. You can check as many songs as you like using the check boxes on the left of the Library Grid. Then, select "Add Checked Songs to the Current Load" from the pop-up menu to add the songs you checked to the jukebox load currently shown in "The Current Jukebox Load is:" grid above the library.

You can filter the library before you select songs to make it easier to locate the songs you want. If the library is filtered, there will be additional buttons available below the library grid. The [Save Jukebox Load](#) button is discussed in the "Using a Filter to Create a Jukebox Load" topic. The "Check All", "Clear Checks" and "Invert Checks" buttons alter the check marks in the check boxes on the left of the Library Grid. "Clear Checks" removes all checks from all the check boxes leaving no songs selected. "Check All" places a check mark in every check box which results in having all songs visible in the Library Grid being selected. "Invert Checks" removes a check mark where one existed and places a check mark where there was none. These buttons are not available unless the Library is filtered for the following reasons. All (Check All) the songs in the entire unfiltered Library already exists as a Jukebox Load named "Library". Also, some libraries could be very large and checking all songs and then adding them to an existing Jukebox Load would create a process that on slower computers could take a long time (hours to days) to complete. In fact, if you check more than 10,000 songs, you will get a message box that will give you the option to cancel or continue the process.

#### 2.4.5 Selecting or Deleting an Existing Jukebox Load

The **Current Jukebox Load** drop down box shown in [Figure 14](#), is used to select a jukebox load. All jukebox loads that have been created will be listed in the drop down list. Just click on the one



you want to select. The songs in the selected jukebox load will be shown in the jukebox grid.

**If you right click with the mouse on the text in the drop down box, you will be given the opportunity to delete the Current Jukebox Load. This is a non-recoverable delete, so, BE CAREFUL**

## 2.4.6 Validating Paths

What is a path? Glad you ask. A path is the address to an mp3 file on your PC. Without the path, PJB would not know where to find the song you want. When you are loading a library, you have to select a folder on your PC where the music is located. That folder is part of the path. Go to the scroll bar at the bottom of the library grid and move it to the right until you can see the "Path" column as shown in Figure 17. You may have to expand the size of the "Path" column to see the entire path unless you have chosen to [Show Cell Hints](#).

	Mood	Path
<input type="checkbox"/>		M:\DLsComplete\Music\James Blunt - All The Lost Souls + covers\09 James Blunt - Annie.mp3
<input checked="" type="checkbox"/>	MusicMat...	C:\Test Music\DL-Music\Les Baxter - April In Portugal.mp3
<input type="checkbox"/>		C:\Test Music\cd1\02-Big Yellow Taxi-Counting Crows.mp3
<input type="checkbox"/>		C:\Test Music\Barry White\Gold (CD 01)\Bring Back My Yesterday - 09.mp3
<input type="checkbox"/>	MusicMat...	C:\Test Music\DL-Music\norah jones - butterflies.mp3
<input type="checkbox"/>		C:\Test Music\Barry White\Gold (CD 01)\Can't Get Enough Of Your Love, Babe - 03.mp3
<input type="checkbox"/>		M:\DLsComplete\Music\James Blunt - All The Lost Souls + covers\05 James Blunt - Carry You Home.mp3
<input type="checkbox"/>	MusicMat...	C:\Test Music\DL-Music\Come Back Baby.mp3
<input type="checkbox"/>	Dance	C:\Test Music\DL-Music\Wandy Moore - Could've Been (A Walk To Remember soundtrack).mp3

**Figure 17. The Path To A File**

When PJB loads a new library or adds to a library, it stores the path to the file in a field in a database. When PJB needs to retrieve the file (song), for example to play it, it goes to the location identified by the path to get the file. If for some reason the file no longer exist at that location, PJB stores a message in the log file and goes on to the next song to play. So, if you know that you picked a song to play, but you never heard it play, you probably need to Validate Paths. Validating paths takes place in the current jukebox load. When you go to the menu bar and click on **Jukebox Management/Validate Paths**, the path for every song in the current load will be checked. If PJB cannot find the file, it is removed from the current jukebox load and from the library. If you want to validate paths for the entire library, select Library as the current jukebox load and then validate paths. There is another discussion of "paths" [here](#). Of course, any path not found and removed from the library is no longer available. To add that song back to the library, you will have to select the folder in which the song is currently located by using the Library Management/Add To Library menu. The Add To Library is also available by right clicking in the Library grid.

If you are familiar with Local Area Networks (LAN) you will likely understand "Mapping Network Drives". PJB can load songs from a mapped network drive (i.e. a hard drive on a PC other than the PC with PJB on it). If you do this and the network drive is unavailable when PJB looks for a file on it, PJB will treat that file as a non-existent file. If you **Validate Paths** under this condition, PJB will remove all the songs located on the currently unavailable drive from your library. The easiest way to always avoid this is to put a large hard drive in the PC with PJB server on it and always load your library from that drive. In other words, though you can use mapped networked drives, it may not be wise. This can also apply to removable (external) drives such as [USB](#) connected hard



drives and thumb (flash) drives. Notice the paths in Figure 17. The very first character in the path is the drive letter. In most of the paths above it is C. However, notice that M is the first letter in the path of the very first one at the top of Figure 17. Whenever a drive is added to a PC, either by mapping it or connecting it by USB, [eSATA](#) or otherwise, the operating system assigns that drive a "drive letter". Mapped drives usually have the same letter assigned to them unless the mapping is changed. External drives, however, may not be assigned the same letter when they are attached. For example, suppose that you attach an external drive on which you have songs stored. When you added songs from that drive to your library, the drive had the letter E assigned to it. Now, PJB cannot find any of the songs that are on the external drive. Why, because before you connected the external drive you had stuck a thumb (flash) drive into your computer and the operating system assigned the first available letter E to it. Now, when you connected your external hard drive, it will be assigned the next available letter F. The song files being looked for by PJB have a path that begins with E. So PJB looks on E (your thumb drive) for the song file and it is not there. This may be more technical information than you like. It is presented here in the hope that it will help understanding.

### 2.4.7 Update Jukebox Load Tags

When you refresh the tag data in your Library, any jukebox load created prior to the refresh may have tags that differ from the tags in your Library. This can be corrected by updating the current Jukebox Load tags. To do this select Jukebox Management/Update Load Tags on the menu.

### 2.4.8 Searching, Sorting and Filtering the Jukebox Load

You can quickly sort on any column shown in the Jukebox Load by simply clicking on the column heading at the top of each column. For example, to sort on genre, click on the **Genre** column heading. See [Sorting the Library \(Sort\)](#) for a more detailed explanation of using column headings to sort your Jukebox Load. The blue "Sort Arrowhead" and the "F12" key discussed there apply to the jukebox grid as well. A more complex sorting method is explained below.

Searching for a song in the current jukebox load is much like searching for a song in the library. The difference is in getting to the **Sort/Find** facility for the jukebox load. In Figure 18, **notice the vertical double headed red arrow in the upper left corner of the jukebox grid**. Click on the red arrow and the Jukebox Auxiliary Menu shown in Figure 18 will drop down.

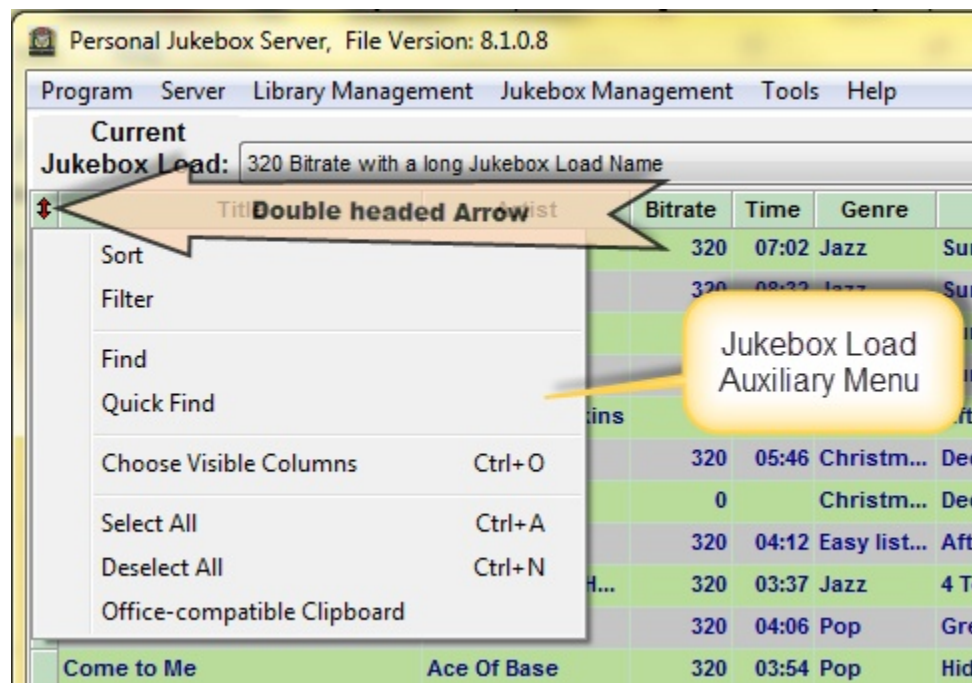


Figure 18. Jukebox Sort, Find &amp; Filter Menu

The menu includes **Sort**, **Filter**, **Find** and **Quick Find** which can be used to locate songs in the current jukebox load. **Sort** works just like the one in [Figure 11](#). If you sort the Jukebox Load, an **UnSort** button will appear above the Jukebox Load grid. This is an indication that the Jukebox Load is sorted. Click the **UnSort** button to remove all sort parameters. **Find** works just like the one in [Figure 11A](#). **Filter** works just like the one in [Figure 12](#). When you filter the Jukebox Load, the grid will turn Fuchsia and an **Unfilter** button will appear to the right of the number of songs in the Jukebox Load. Please realize that, if there are no songs in the jukebox load that match your filter settings, the Jukebox Load grid will be empty. Click the **Unfilter** button to see all the songs in the jukebox load. **Quick Find** allows you search based on one database field. Clicking **Quick Find** opens the window shown in Figure 19.

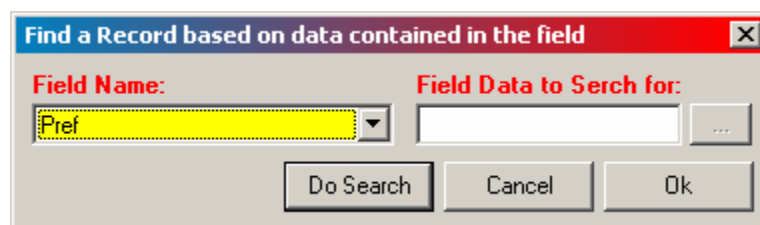


Figure 19. The Quick Find Window

In the example shown, **Quick Find** will look only at the Pref (preference) field for the data you type in the **Field Data to Search For** box. The buttons **Do Search**, **Cancel** and **Ok** have their usual functions.

The **Choose Visible Columns** menu selection provides a way to display only those columns of data that you want to see. Figure 20 shows the window that will open when you click on Choose Visible Columns.

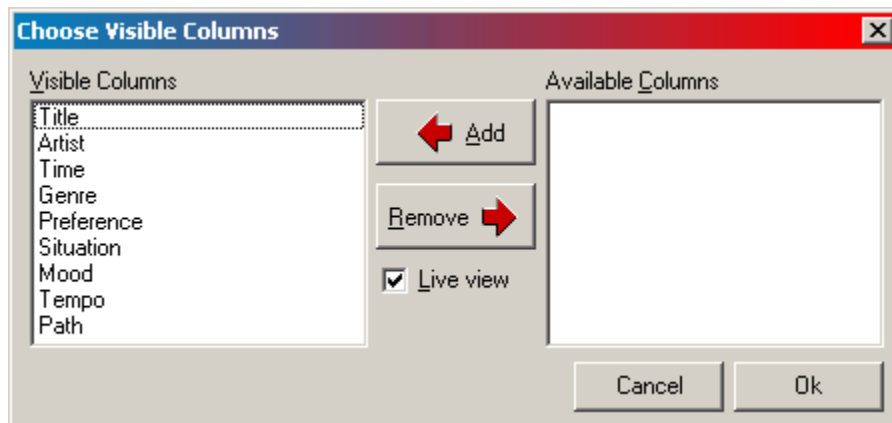


Figure 20. Choosing Columns to Display

Using the window you can **Add** a column or **Remove** a column. Place a check in the **Live view** check box to see the changes immediately. When unchecked, the changes take effect when the window closes. **Cancel** and **OK** have their usual functions. You can also change the order (let to right) of the columns. To do so, place the mouse cursor on the column title button (at the top of the column); press the right mouse button and hold it down while you drag the column to the position where you would like it to be. When you release the right mouse button, the column will be there. Personal Jukebox will save your settings when you close the application.

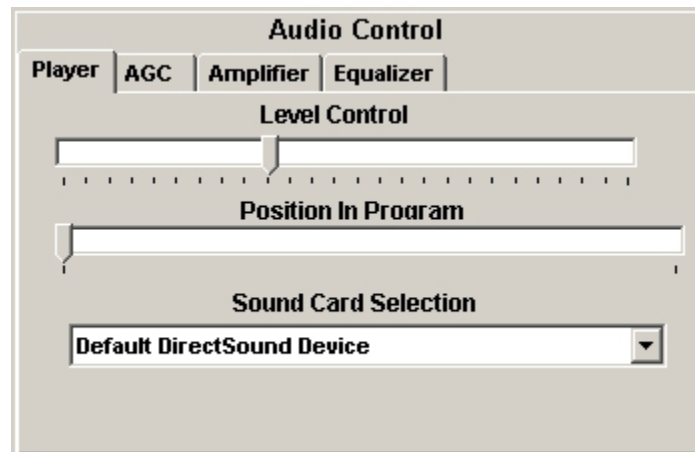
The **Select All** and **Deselect All** menu items allow you to select or unselect all the songs in the Jukebox Load.

## 2.5 The Audio Control Panel

The Audio Control Panel is the central control for the sound that comes from your selected sound card. If you don't hear anything, make sure that the Level is moved to the right. Also, if you have more than one sound card, make sure that you are listening to the selected sound card.

### 2.5.1 The Player Tab

The **Player Tab** was discussed briefly in Quick Start. Here are more details. The **Player Tab** contains a **Level Control**, A **Position In Program** track bar and a **Sound Card Selection** drop down box. These all control the mp3 player within PJB.



**Figure 21. The Player Tab**

The **Level Control** is the master volume control. Left is less volume and right is more volume. Monitor the volume by listening to the output of the selected sound card with headphones or speakers and adjust it to a suitable level. The **Position In Program** track bar will move left to right as the selected song plays. If you have clicked the **Start Play** button you can drag and drop the pointer to play different parts of a song. The song will begin playing from the pointer's position when you lift the mouse button (drop). When the **Start Play** button is clicked the song always starts playing from the beginning.

Some PCs are equipped with more than one sound card. To cover this possibility, PJB allows you to select the sound card you want it to play through. This is accomplished by clicking on the **Sound Card Selection** drop down box and clicking on the sound card of your choice. Make sure that the target of your music be it headphones, speakers, FM Transmitter or other is connected to the selected sound card.

## 2.5.2 The AGC Tab

AGC stands for Automatic Gain Control. PJB uses digital signal processing to even out the played volume of mp3 files. Sadly there is no standard used to establish the volume of audio files converted to mp3 files. Consequently, one mp3 file may play quit loud and the next one may play very softly even though the player level control is not changed. It is desirable when listening to music not to have to constantly adjust the level control to amplify low volume songs and attenuate high volume songs. Take a look at Figure 22.

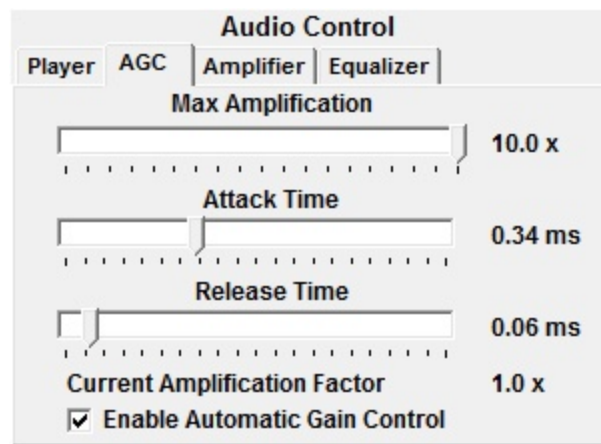


Figure 22. The AGC Tab

The **Max Amplification** slider sets the maximum amount that the volume will be increased by AGC. It can be set between 1 and 10. The **Attack** slider can be set between 0 and 1.0 ms. Setting the **Attack** slider lower will cause the amplification action to take place for a shorter time. Set higher, amplification will take place for a longer time and may have a greater effect. The **Release** slider is set to the length of time the action will remain in effect. It can be set between 0 and 1 second. Finding the optimum setting is, for the most part, a trial and error effort. Once you have determined the settings you like, you will likely not change them anymore. The **Enable Automatic Gain Control** check box at the bottom of the window enables the AGC when checked and disables it when unchecked. Please note that the AGC works by lowering the volume of all songs and then controlling the increase in amplification. So when you disable the AGC, you will likely have to go back to the Player tab and lower the Level Control. Likewise, if you make changes and re-enable the AGC, you will have to adjust the Level control on the Player tab.

### 2.5.3 The Amplifier Tab

The provides the ability to apply an overall amplification factor to the player. Take a look at Figure 23.

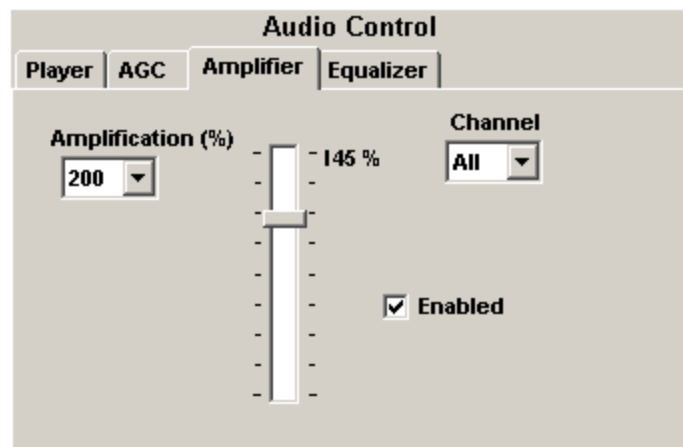


Figure 23. Audio Control Amplifier Tab

The **Amplification (%)** can be set to 100 - 1000 per cent in increments of 100. A setting of 100 allows an amplification factor of 1 (100%). A setting of 1000 allows an amplification factor of 10

(1000%). The vertical slider allows an adjustment between 0% and the setting of **Amplification (%)**. In Figure 23 the slider allows an adjustment between 0% and 200% and is set to 145%.

The **Channel** drop down box refers to the number of the channel (**All** or **Ch0Ch9**) you want to adjust. Since most music is stereo, only the **All** (channels at once), should be used. If you have a very low output sound card and need additional amplification, you can adjust it here. Also, if there is a significant imbalance between the left and right channel amplification on your sound card, the channels can be independently adjusted to balance. In most cases you will not need to use this feature. But, it's here if you do. The feature is enabled by placing a check in the **Enabled** box. Without a check, it is disabled.

## 2.5.4 The Equalizer Tab

The **Equalizer Tab** displays a conventional audio equalizer. Refer to Figure 24 The equalizer provides boost or cut adjustment to

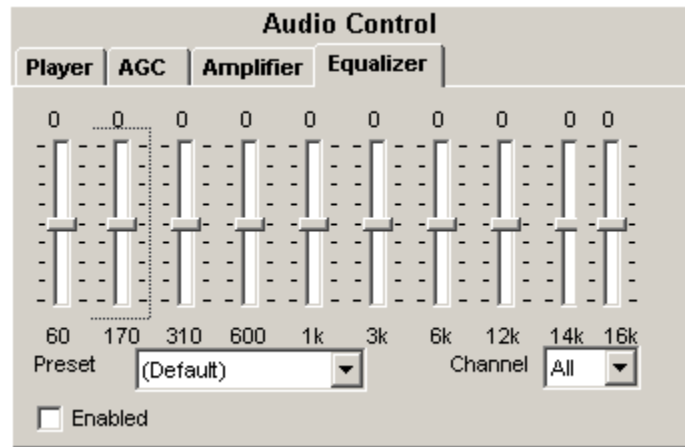


Figure 24. The Audio Equalizer

ten frequency bands. The bands are centered at 60, 170, 310, 600, 1k, 3k, 6k, 12k, 14, and 16k hertz (cycles per seconds). 60 through 310 hertz are the lower, bass frequencies, 600 - 3k hertz are the mid range frequencies and 6k - 16k hertz are the higher treble frequencies. The channels are the same as discussed on the **Amplifier Tab**. The **Preset** drop down box offers a number of preset equalizations such as Dance, Loudness, Rock, Party, etc. You can set your own levels and they will be remembered across sessions of PJB. However, if you select a **Preset**, your custom preset will be lost.

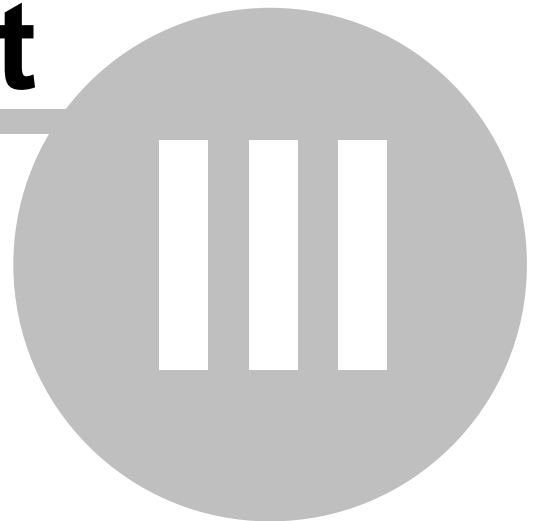
If you are feeding the output of PJB into an audio system such as your Hi-Fi or an FM Transmitter, it is usually best to leave the equalizer set to (Default), in other words, all sliders at 0 as shown in Figure 24. If you are using your PC's sound system, then you can adjust the equalizer to get the sound you want.

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# Part

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### 3 Using Personal Jukebox

Assuming that you have installed Personal Jukebox, read its [introduction](#) and [Quick Start](#) and loaded its library with Mp3 files, you are ready to use it to fill your life with music. This section of help will cover only the routine operation of Personal Jukebox. Take a look at the figure below.



Figure 26

Here you see the play control buttons above the **Play Cue**. Their function is self-explanatory. When they are grayed out (like Stop Play), they are inactive and cannot be clicked. In Figure 26, Clear List and Start Play are active. Skip and Stop Play are not. The following topics go into more detail.

#### 3.1 Playing Songs

The simplest way to play songs is to click **Start Play** (see [Figure 26](#)). Once you click it, it will become inactive and **Stop Play** will become active. **Skip** will also become active if it is [visible](#). If there are songs in the play cue, **Clear List** will become active.

When you click **Start Play** and there are no songs in the play cue, Personal Jukebox will randomly add songs to the play cue from the current Jukebox Load and start playing them. The number of songs added is determined by the setting in [Options](#). If you have already added songs to the play cue, clicking **Start Play** will start playing the song at the top of the play cue. When the song is finished, it is removed from the play cue and the next song moves to the top and starts playing. Adding songs to the play cue always adds them to the bottom of the play cue list.

To stop a song from playing click **Stop Play**. The currently playing song will stop. Click **Start Play** to continue playing the song from the point where you stopped it. If you want to stop the song currently playing and start playing the next song in the play cue, click **Skip** if it is available (visible). Skip is not available unless it is allowed in the [options](#).



If you want to remove all the songs in the play cue, click **Clear List**. Note that **Clear List** is inactive while songs are playing. You must click **Stop Play** to make **Clear List** active.

As mentioned, Personal Jukebox plays the songs in the play cue in order from top to bottom. It is possible to [change the order of songs in the play cue](#) if the [Allow Play Cue Alteration](#) is set in [Options](#).

## 3.2 Adding Songs To the Play Cue

Songs are added to the play cue by placing the cursor (which becomes a pointing finger) on the song in the jukebox load grid (see Figure 29) and double click it. The selected song will appear at the bottom of the play cue list.



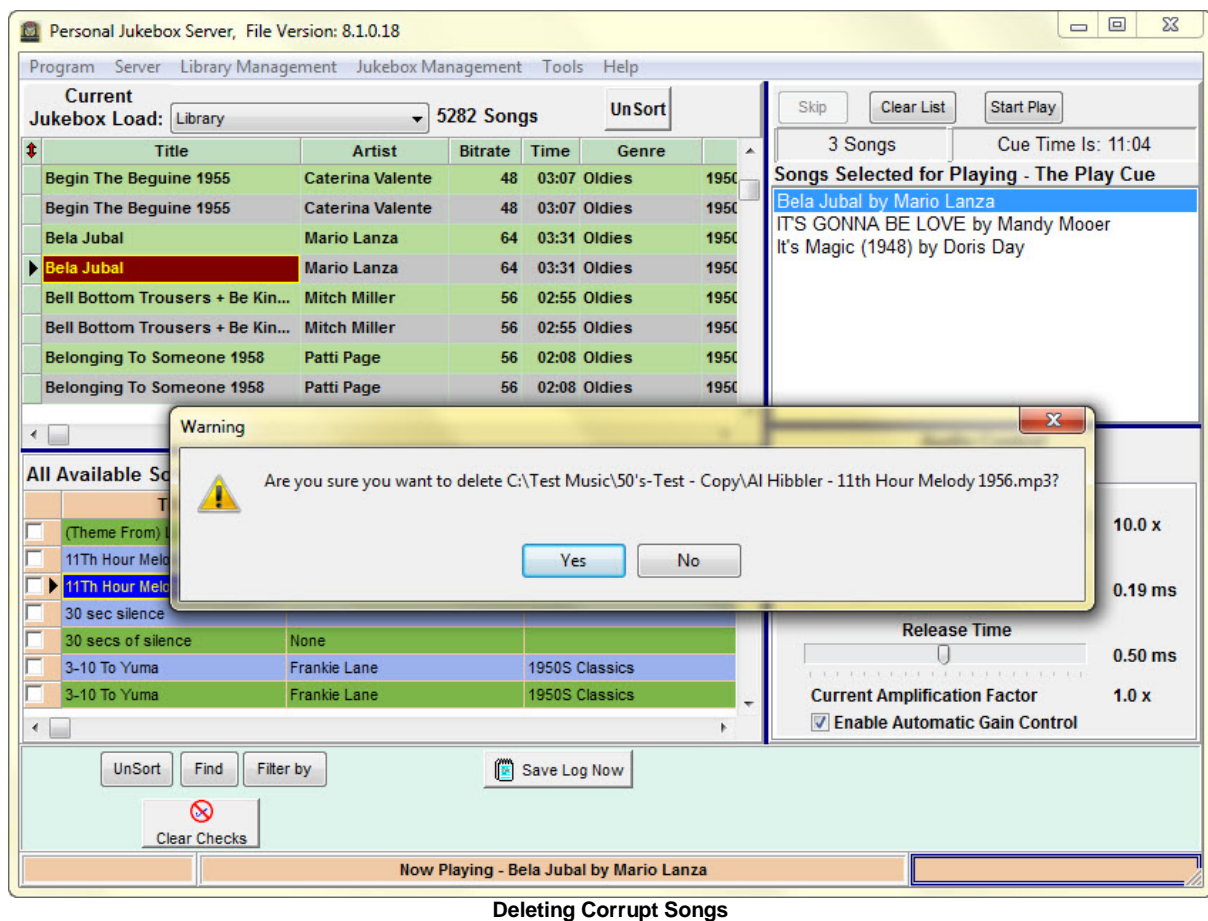
Figure 29

Above, a double click at that point will add "You're Still The One" to the play cue. Notice the two boxes just above the play cue. The left box indicates the number of songs in the play cue and the right box indicates the time it will take to play all the songs in the play cue in minutes and seconds (mm:ss).

Duplicate songs are not allowed in the play cue unless that [option](#) is set.

## 3.3 Delete Corrupt Songs

Sometimes a song will begin to play and will not play properly. It is likely that the MP3 file has been corrupted. To delete the corrupt file, double click on it in the play cue. However, it must be in the top most position of the play cue to be deleted. Since this delete is designed to remove corrupted song files from the hard drive as well as the library, a warning message will be shown that will ask you if you really want to do it.



Illustrated above you can see that the file located at C:\Test Music\50's-Test - Copy\AI Hibbler - 11th Hour Melody 1956.mp3 has been removed from the play cue and will be deleted from the hard drive if the "Yes" button is clicked. If you want to save the file for some reason, click the "No" button.

### 3.4 The Tools Menu

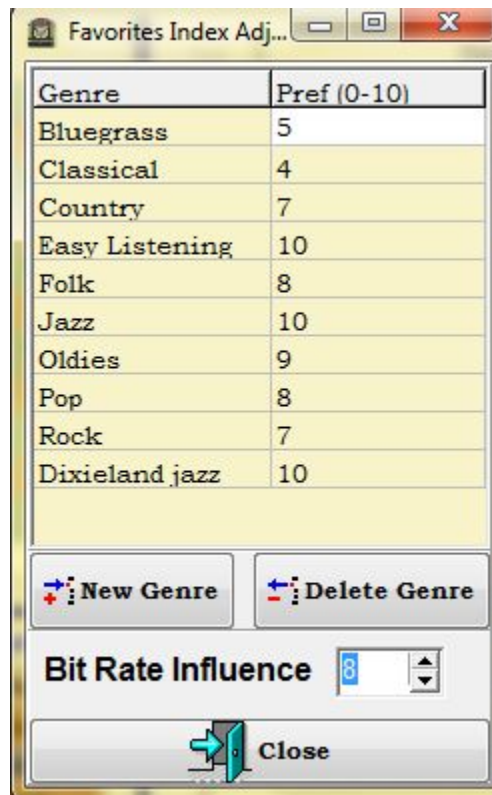
As of Build 8.0.0.0 PJB contains the "Tools" menu shown below



### The Tools Menu

The first three sub-menus allow you to copy songs (.mp3 files) from PJB to a drive and folder selected by you. The first two, Copy Filtered Jukebox Songs and Copy Filtered Library Songs, require you to create a filter for either the current Jukebox Load or the Library respectively. If the Jukebox or Library is filtered, the appropriate menu will be enabled. The third menu, "Copy Selected Library Songs", allows you to select any number of songs from your library using the check boxes next to each song and then copy them to the selected folder.

The next two sub-menus are used to create "Favorites" in the Library. "Genre Rating Mgmt" will open a window that will allow you to establish your preference ratings for the genres assigned to the songs in your library.



Genre Mgmt

Some of the more common genres are included, however, you can add new ones with the "New Genre" button. You can also delete the currently selected genre with the "Delete Genre" button. You can set the "Pref" (preference) value to a number between 0 and 10 inclusive. 10 is the most preferred and 0 is the least preferred. When creating a "Favorites Index" (FavNdx) for a song, any genre not listed in "Genre Mgmt" is considered to have a genre preference of 0.

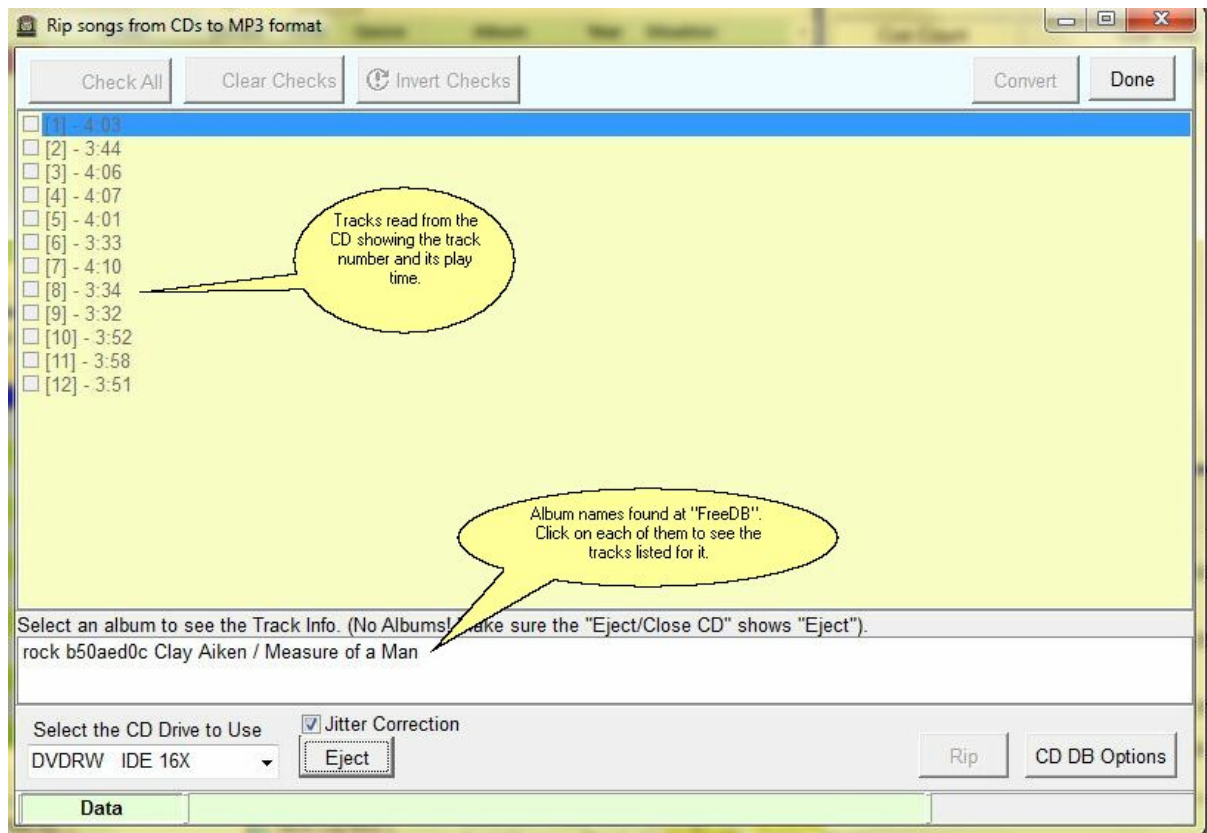
There is also a "Bit Rate Influence" spin edit option. It can be set from 0 to 10. When set to 0, the bit rate at which the MP3 song file was compressed provides no increase in the "Favorite Index" for songs. When set to 10, the bit rate has maximum influence. (Note: Songs having a higher bitrate will have higher quality at playback and songs having a lower bitrate will have lower quality but produce smaller files.) Click the "Close" button to close the Genre Mgmt window.

The "Generate Favorite Index Values" menu will create a "Favorite" value between 0 and 10 inclusive. If the library is filtered when this menu is chosen, only the songs in the filtered list will have their favorite value calculated. There will be a message to remind you that the library is filtered. The "Favorite Index Value" is calculated using a complex algorithm based on the Genre, Bit Rate, Preference and number of times the song has been manually selected to play (maintained in the "SelCnt" field of the database). Note: If genre or preference for a song does not have an entry, they are considered to have a value of zero (0) when a favorite index value is calculated. The "Favorite Index Value" is maintained in the "FavNdx" field of the database. Both the "SelCnt" and the "FavNdx" fields can be used in filters.

As of version 8.0 PJB includes "Conversions" tools. The possible conversions are listed in the sub-menu shown in "The Tools Menu" above. They are "CD to MP3", "MP3 to Wave", "Flac to MP3", "WMA to MP3" and "OGG to MP3". The following is a description of each.

**CD to MP3:** This feature provides a method to "RIP" songs from an audio CD. Ripping refers to the

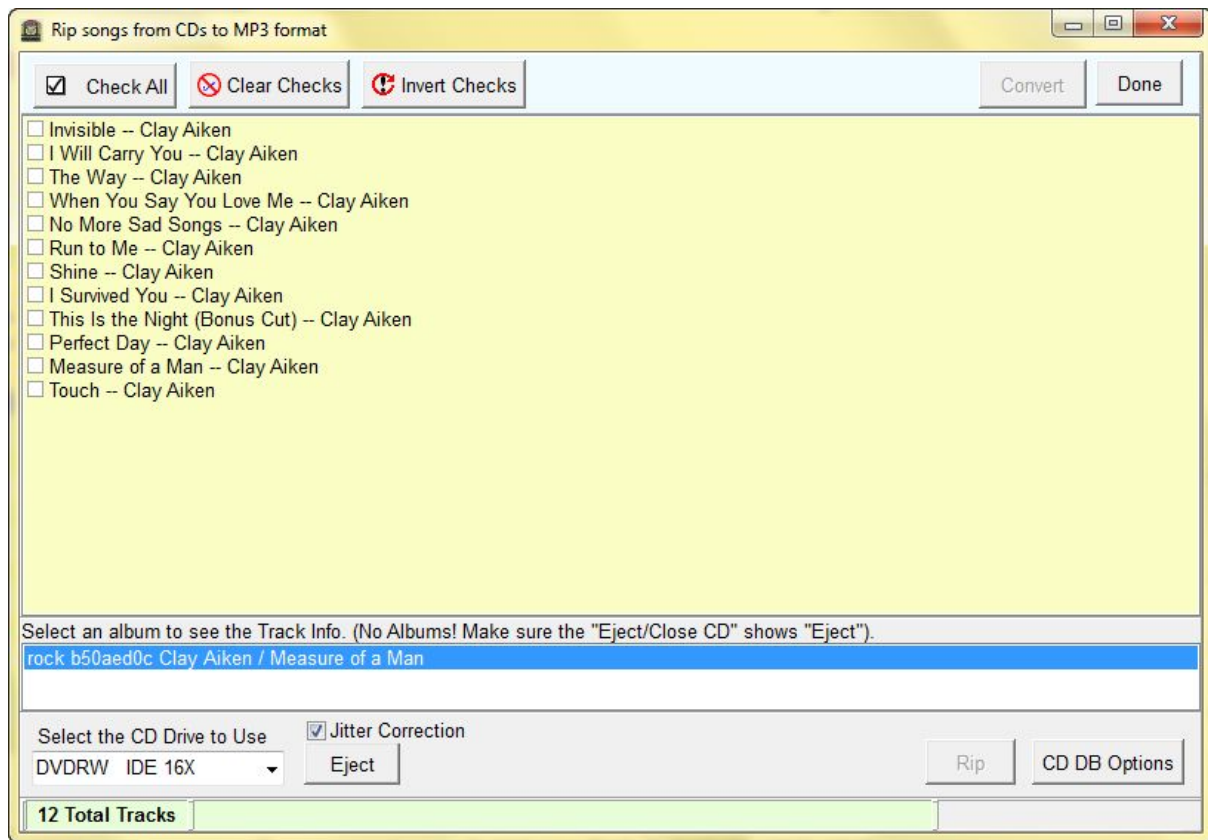
extraction of the digital data that is used to store music on an audio CD. CD to MP3 does this and converts the digital audio data to a file formatted as an MP3 file. The MP3 format is the audio compression format that PJB plays. The files on a standard audio CD rarely have "Tags (*Tags refer to data that are added to the main file. They are also referred to as "metadata". In the case of music, tags are not part of the music. When the music is played, the tags are not involved. The tags are there and can be read and displayed when handled by software. Tags for music files typically contain information such as the song title, the artist, the genre and so forth.*)" stored with them. CD to MP3 will check with "FreeDB" (a web based album database) and attempt to download tags for each track on the CD. To rip songs from a CD and format them as MP3 files, click on CD To MP3. If there is no CD in the selected drive, the resulting form will be empty. "Eject" the CD tray. Insert an audio CD and "Close CD". It will take a little time for the CD drive to become ready. After it does, the form will resemble this.



Converting CD Tracks to MP3

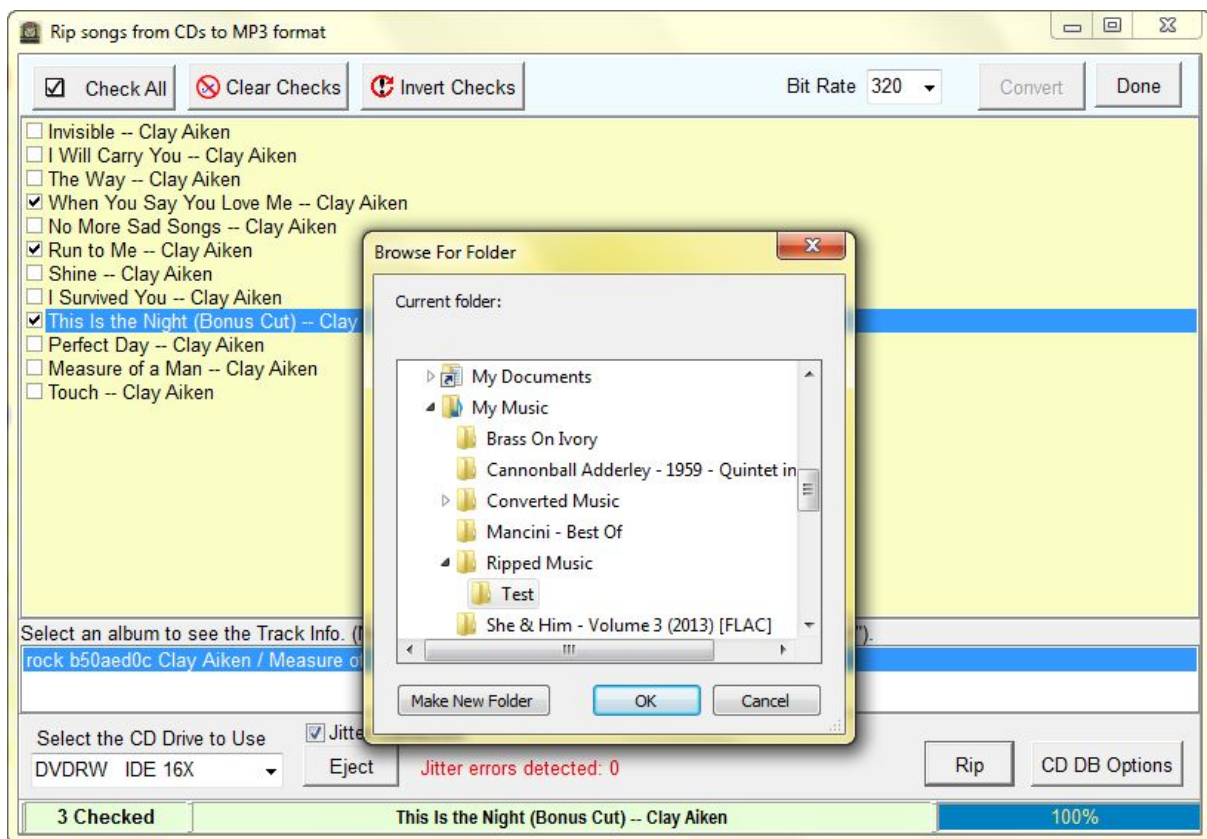
Notice that PJB has already read the CD and listed each track and its play time. The block below labeled "Select an album to see the Track Info." will display a list of the albums from the internet CD database that may be this album. If more than one album is displayed, select the proper one and its track information will be shown. Here only one album is displayed and its title is the same as the album on the CD placed in the CD drive tray. Click on that album to update the track information with the proper tags. This is shown in the following.





Data for Tracks After Album Selection

If the track information is correct, we are ready to select the tracks to rip. To rip all the tracks, click on the "Check All" button at the top. This will place a check mark in the block to the left of each track. At least one track must be checked before the "Rip" button will be active. Of course, we can check or uncheck each track individually. Only the tracks that are checked will be ripped. "Clear Checks" will remove all the check marks and "Invert Checks" will remove the checks from currently checked tracks and place a check by currently unchecked tracks. When the desired tracks are checked, the "Rip" button can be clicked. That will start the ripping process. A dialog form similar to the one below will appear so that a folder in which to store the ripped tracks can be selected.



#### Selecting a Folder In Which to Save Ripped Songs

Select a folder and click "OK". Be sure to remember where you saved the tracks so you can find them later. After clicking OK the ripping process will begin. The window will be closed and the ripping process will continue in the "background". On PJB's main form there will be a blinking label ("Conversion In Process") in the lower left corner. The label will continue to blink as long as the conversion process continues. At the same time, below the label, a text box will indicate the track currently being ripped and the progress bar will indicate the percentage of completion. When all the tracks have been ripped, the label and progress bar will disappear. If "Cancel" is clicked, the folder selection dialog form is closed and ripping will not start. This will allow you to either alter the checks and click "Rip" again or to simply click "Done" and return to PJB's main form without ripping or converting anything.

**CDDB Options:** The initials CDDB stand for Compact Disk DataBase. This used to be an Internet database from which anyone could freely acquire track information for music albums on CDs. It was updated by its users. However, it was purchased and became fee based. It was replaced by FreeDB which can be used by anyone for free. So many music lovers became familiar with CDDB, it is still common practice to use the initials to mean access to album track information from the Internet. If you click on CDDB Options the following form will be displayed.

CD DB Options

Enter your Email Address

mymail@myhost.net

http://freedb.freedb.org

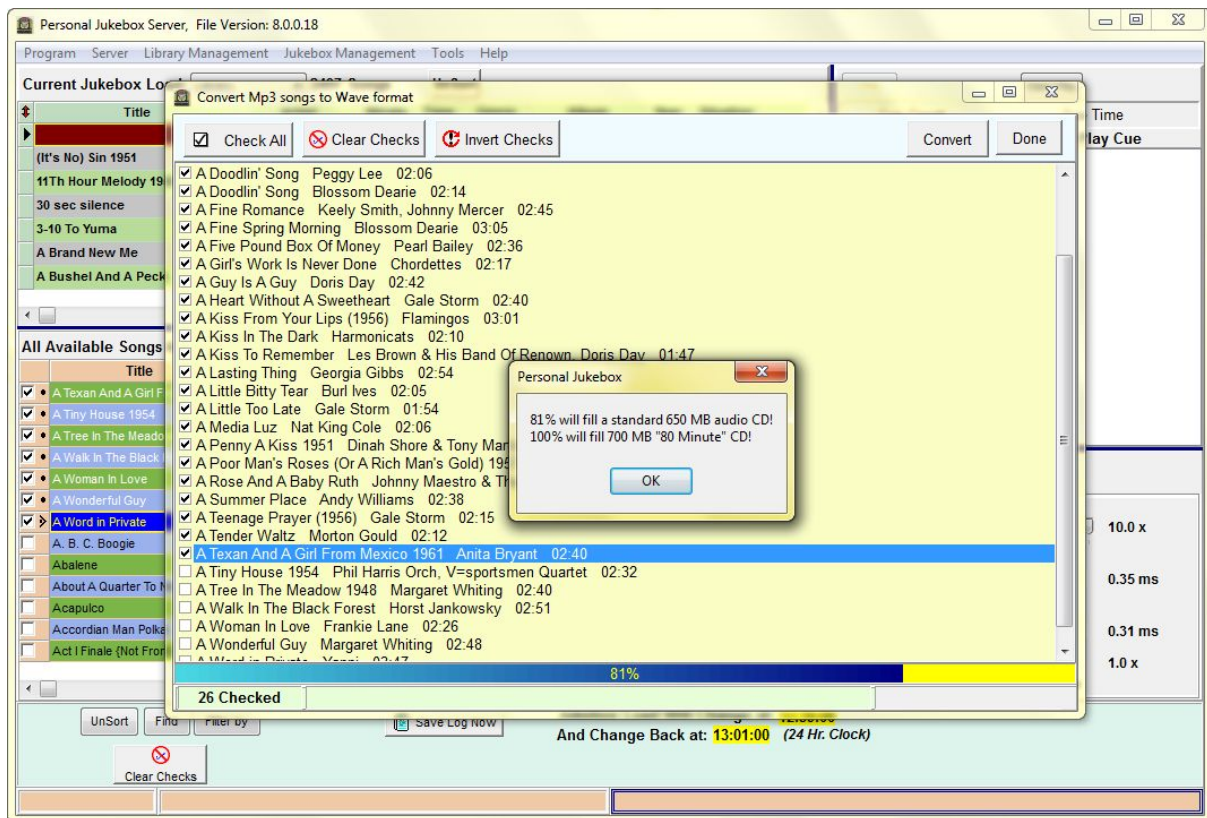
Rip CD DB Options

CDDB (FreeDB) Option Form

You do not need to make any changes here. You can, if you choose to, enter your email address. When the form is first displayed, the drop down combo box will be blank. Clicking on the drop down arrow will display the default "freedb" web address. Don't change this unless FreeDB stops responding. If you change it, you will need to know the web address of a suitable source of music album track data.

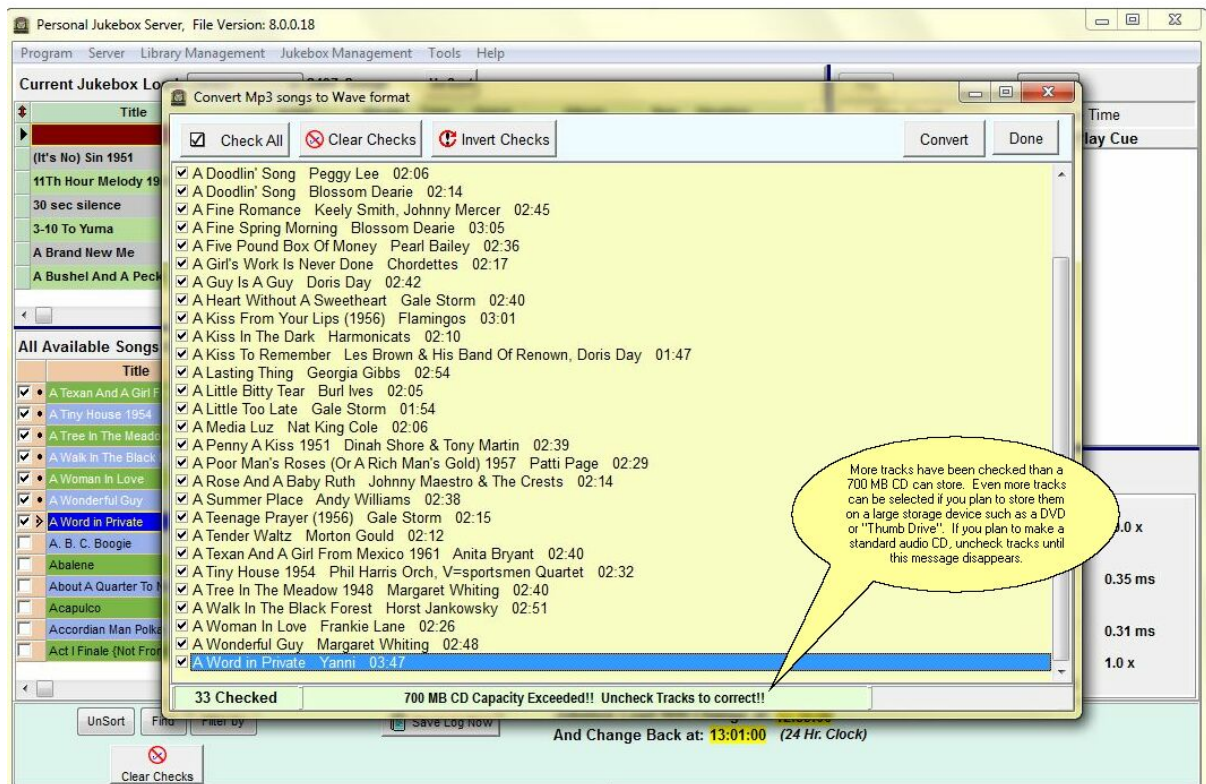
**MP3 To Wave:** Some CD players will not play CDs with MP3 formatted tracks. They will only play standard, wave formatted, CDs. This is quite often true of older CD players and some CD players in automobiles. If you want to prepare a folder of wave formatted tracks selected from your library, you must first select them in the Library on PJB's main form. After choosing the menu item "Conversions" / "MP3 To Wave", the "Convert MP3 Songs to Wave Format" form is displayed. When first displayed, the tracks you selected from your library will be displayed but, there will be no tracks checked. In the illustration below 26 have been checked for conversion. Wave formatted tracks take more storage space than MP3 formatted tracks. Typically, the standard blank CD can store 650 megabytes of data. This translates to about 15 to 30 wave formatted tracks depending on the length of each track. It is recommended that you select at least 30 to 40 songs from your library. This will insure that "MP3 to Wave" will allow you to pick from those songs, enough to fill a CD. This is illustrated below. Note that on the main form (in the background) that you can see the last tracks checked in the library.





Enough Tracks Selected to Fill A 650 MB CD.

The above illustrates the message box you will see when you have selected enough tracks to fill a 650 MB CD. Click OK to continue selecting tracks. When you exceed the number of tracks that will fit on a 700 MB CD, the progress bar will disappear and the information bar will display the message "700 MB CD Capacity Exceeded!! Uncheck Tracks to Correct!!". The reason for this is that most CD Burning applications are easier to work with if there is one folder that holds the data that you want to put on the CD. If you just want a folder full of wave formatted files, check as many as your hard drive can hold. The point at which a 700 MB CD will be filled is illustrated below.

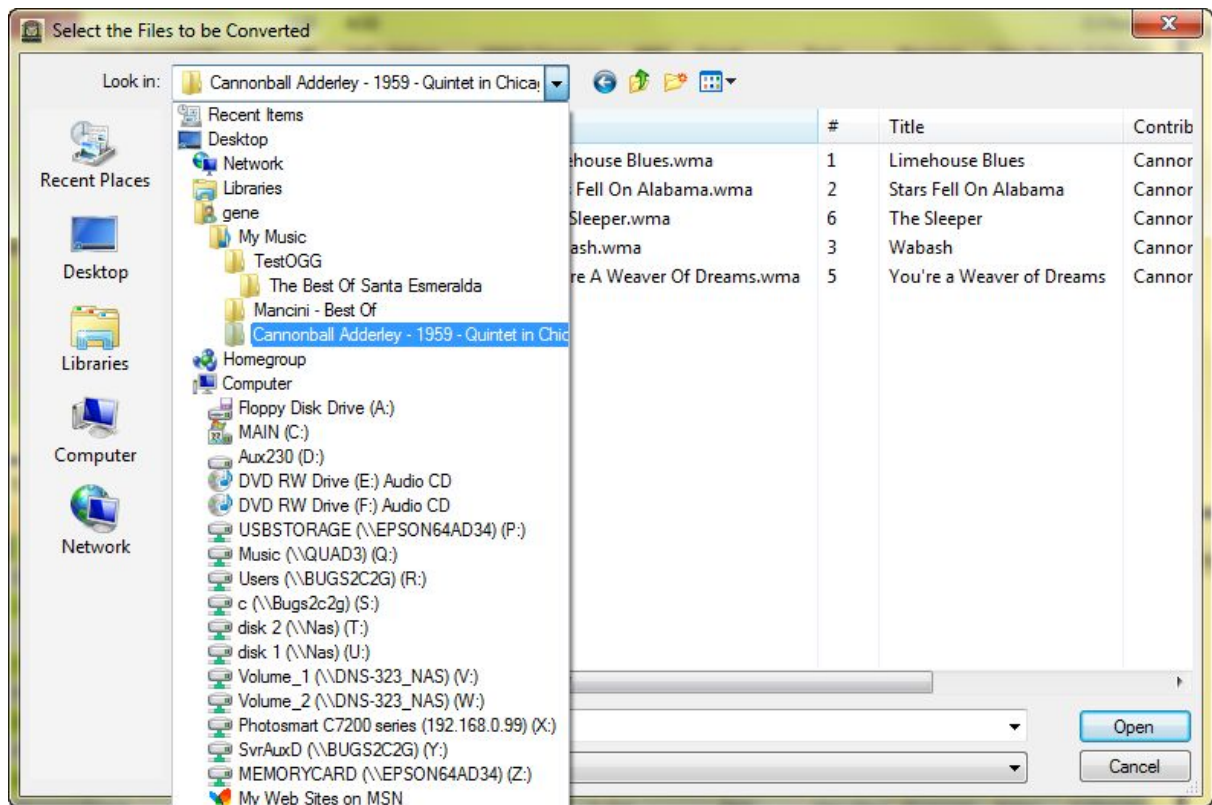


Converting MP3 Tracks to Wave Format

You can check or uncheck any tracks. When you are satisfied that you have checked the tracks you want to convert, you are ready for the conversion. Clicking "Convert" will start the conversion process.

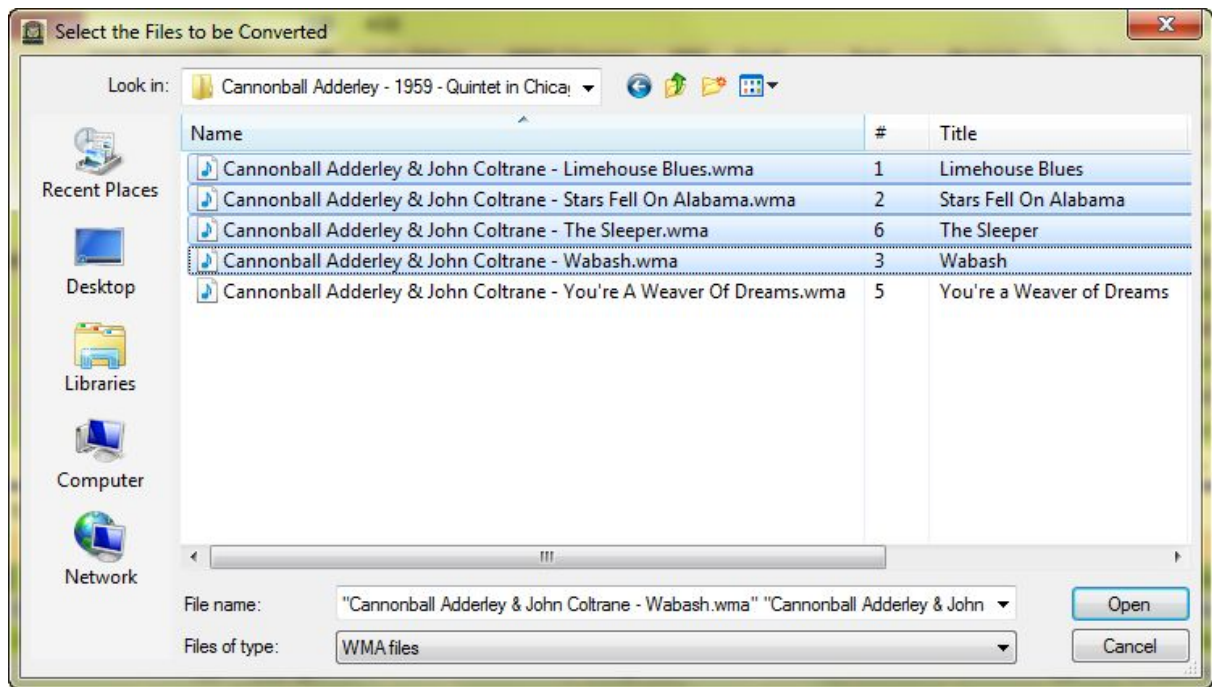
"MP3 to Wave" conversion is similar to "CD to MP3" in that it is a "background" operation. Once the conversion begins the form will close and display the main form. After clicking "Convert", a "Browse for Folder" dialog window will open just as it did for "CD to MP3" (refer to the illustration above). You may want to use the "Make New Folder" button to create a new folder that will contain only the tracks that you are converting to wave format. Be careful to make a note of your created folder's location. Make sure that you know the name of the folder in which your new folder resides. After creating your folder of wave formatted songs, you can use a CD/DVD burning application to create a CD that will play on most CD players as well as your computer. Maybe in a later version, PJB will include the CD burning feature! As with "CD to MP3", the "Conversion In Process" label will blink until the conversion is finished. The track being converted will be displayed and the progress bar will display the percentage of completion.

**Flac to MP3, WMA to MP3 and OGG to MP3.** These conversions work much the same as the two above except that when you select one of them, you will be presented a form in which you will have to locate the source files (songs). This means that you must know where your music is stored (i.e. their path). See "Paths" in [Managing The Library](#).



Selecting Source Files

You will only be able to see files that match the file extension (\*.wma, \*.flac, or \*.ogg) of the format you choose to convert. In the example above, we have chosen to convert \*.wma files to \*.mp3. (The "" is a place holder for any file name.) The folder we have selected contains songs that have a \*.wma file extension. The example below illustrates all but one of the source files have been selected.



Selected Source Files

Click on "Open" and the familiar window with the check boxes will be displayed. (See "Converting MP3 Tracks to Wave Format" above.) After this, you only have to check the songs that you want to convert, select a folder in which your converted songs will be stored, click "OK" and the conversion will start (in the background). The main form will be display and the blinking "Conversion In Process" will be shown along with the song currently being converted and the progress bar percentage.

Here's to happy converting! Now, you can prepare almost any song for use in Personal Jukebox.

The "Tools" are just nice utilities that enhance the value and usefulness of Personal Jukebox.

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# Part

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IV



## 4 Using PJB with FM Transmitters

Personal Jukebox (PJB) really shines when it is used with a FM transmitter. This topic will be a bit more technical since it will discuss the details you need to know to set up your own FM radio station. The following topic will provide a brief explanation of the way to do it.

### 4.1 The Basic Block Diagram

To establish your PJB driven FM radio station, you will need the following:

- PJB Server software
- A PC (preferably with two sound cards)
- An FM Transmitter
- At least one FM receiver
- A second PC running PJB Client to select songs remotely

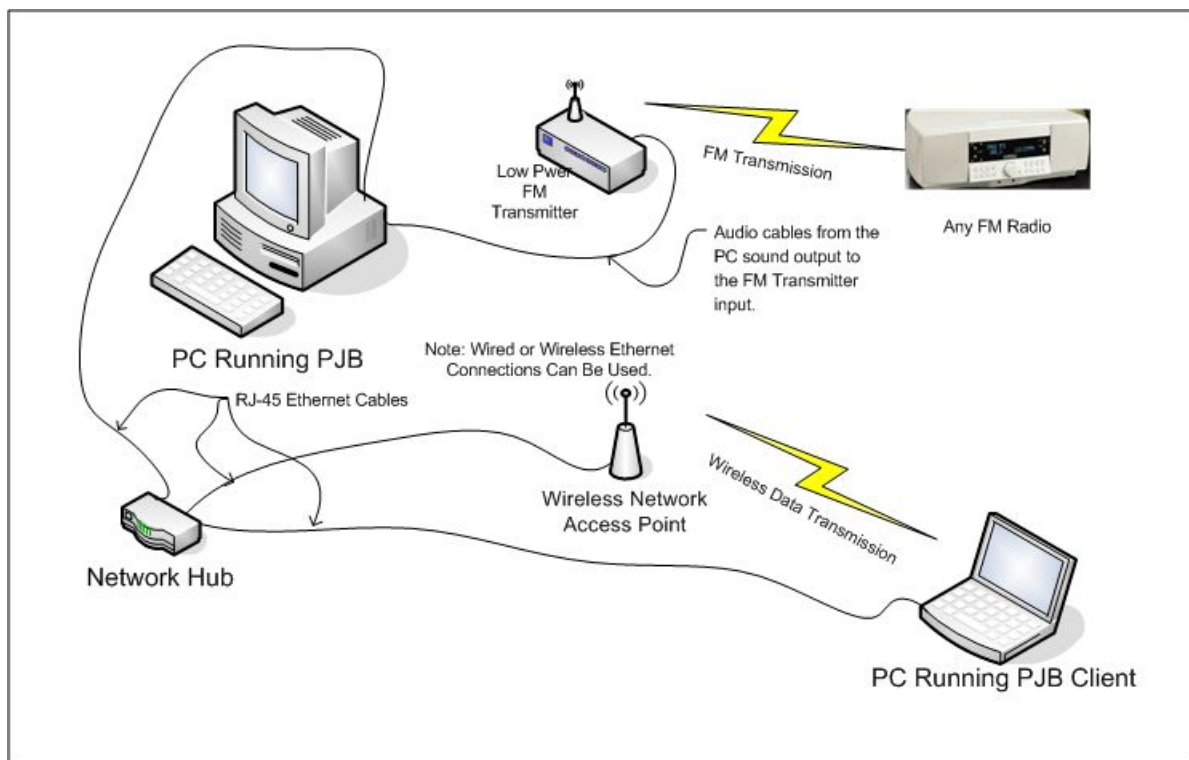


Figure 1. Basic Block Diagram

Refer to Figure 1. The PC running PJB will be referred to as the Server. The PC running PJB Client, a laptop or tablet, will be referred to as the Client. Following is a brief description of each of the items in Figure 1.

1. The Server PC. The PC serving PJB is typically a desktop but could also be a laptop. The PC must be running Microsoft Windows XP SP3 or higher (PJB runs under Vista, Windows 7 and Windows 8). PJB does not support Apple OSs or

Linux. As mentioned before, it is recommended that two sound devices be installed in this machine. One could be on the motherboard (this is the main printed circuit board in the computer) and the other an add in board plugged into the motherboard. The reason for recommending two sound devices is so that you can dedicate one to PJB. This allows you to direct normal Windows' sounds to one and PJB's sound to the other. If you do this, then you will not be transmitting the normal Windows' sounds to the FM radio band. Connect one sound device output to the PC speakers and the sound device being used for PJB output to the FM transmitter.

2. The Low Power FM Transmitter. There are numerous sources of these. Check out [North Country Radio](http://www.northcountryradio.com). They have two models that work well. First, there is the MPX96 PLL Stereo Transmitter. If you are good at kit building, you can save some money by building their kit. I highly recommend this unit. It can also be purchased completely assembled. Their web site is <http://www.northcountryradio.com>. Second there is [Ramsey](http://www.ramsey.com). They have kits as well. One is the FM25B. I strongly recommend that you purchase a frequency synthesized transmitter because they are more stable and are easily received by digitally tuned FM receivers. Ramsey also provides a finished model, the FM35BWT.

These transmitters will provide ample signal strength throughout the average house and yard (my experience is an acre or more). Pay attention to the antenna. Three to four feet is ample. Telescoping ones work quite well.

3. The FM Receiver or Radio. The radio can be a portable one, FM stereo capable headphones, an ordinary table radio, a high power Hi-Fi Stereo Receiver or any device capable of receiving FM stereo signals; even the car radio. One example is a Hi-Fi receiver driving high quality speakers by the swimming pool. A Wi-Fi connected laptop or tablet computer running PJB Client by the pool allows your guests to select the songs they want to hear. How cool is that?
4. The Local Area Network (LAN). This is a standard setup found in many multiple computer homes these days. Some of them are "wired" and some are "wireless" while many are both. Figure 1 above shows a wired hub and a wireless access point. However, if the hub is wireless, the access point is not needed. Also the laptop computer in the diagram needs only the wireless connection or the wired connection, not both. Both are shown just as an example.
5. The PJB Client. This is a PC connected to your LAN either by wire or wireless. It is shown as a laptop but can be a desktop or tablet as well. Like the Server PC the Client PC must be running Windows XP SP3 or higher (Windows 8 on a touch screen tablet is nice). Typically, the client PC will have only PJB Client installed on it. By not having PJB Server available on the client machine, guests will not have access to PJB Server and, thus, cannot alter your jukebox setup. The purpose of PJB Client is to provide you and your guests the ability to simply select songs to be played on the jukebox.

I hope this brief explanation helps you set your personal jukebox just the way you want it.



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# Part

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V

## 5 Definitions

The purpose of this section is to provide you with the definition of some of the terms used in these help documents. Some of the terms you may be familiar with but, may be used in a context with which you are not familiar.

- **Jukebox Load** - Typically, a sub-set of the songs in your library that have been placed on the jukebox to make them available to be played. Some users have tens of thousands of songs. Quite often they do not want all their songs to be available to be played. Only the songs in a jukebox load will be visible in the display window of PJB's companion client program. If, for example, you are hosting a dinner party, you can create a jukebox load containing only specific songs in the Easy Listening and Smooth Jazz genres that will create the mood you desire for your gathering. PJB will then randomly select songs from that jukebox load and play them. If you have a computer running PJB Client available to your guests, they will be able to select songs to be played but, only from the jukebox load you have established on PJB. In many ways a Jukebox Load is similar to a Playlist.
- **MP3 Format** - Songs on a conventional compact disk (CD) are in a digital format called a "wave" file (WAV). Wave files are large and consume a lot of storage space. They also, because of their size, take longer to transmit over networks and take more bandwidth. Some very clever software engineers took a mathematical approach to the analysis of wave files and found that there was a great deal of redundancy in them. With this knowledge, they devised a way to remove the redundancy to compress the file size. When the file is played, using appropriate mp3 software, the redundant part is restored. Mp3 was the first compression technique and created the ability to store and transmit large audio files. It is likely the most used of the many similar compression methods now available.
- **Grids** - Grids are tables made up of rows and columns. The row is horizontal and the column is vertical. The rectangle created where the row and column intersect is called a cell. PJB uses grids to display information about your music. The information for a single song is contained on one row. Each column in that row is a specific bit of data about that song. For example, the column on the left is "Title". The cell at the intersection of the the first row and the left hand column will contain the title of the song for that row. In "techspeak", each row represents one record (a song) in a database and each column represents a database field.
- **Bitrate** - The songs stored on your hard drive will be in a format named MP3. This format represents a method of compressing digital audio data to create a file that is smaller in size (number of bytes of data). In order to do this, the original song in digital format (usually from a CD) is sampled at a specified number of data bits per second. That is referred to as the bitrate. This explanation is greatly simplified but, hopefully, you get the idea. In general, the greater the bitrate, the better the quality of sound. However, the greater the bitrate, the larger the resulting MP3 file will be. With the size of modern hard drives in mind, music should be compressed using bitrates of 128 or greater.
- **Server** - As used here server refers to a computer used to serve applications or files. PJB's main application can be used as a server. What this means is that PJB will respond to a client located on a computer on the same Local Area Network (LAN). The PJB client can be installed on a computer other than the one where PJB is installed and used to control (to limited extent) what PJB does. To use PJB's server, you must start the server when you start PJB. See [Activating the Server](#).
- **Client** - A client is usually an application that relies on a server to do most of the work. As mentioned above, PJB Client relies on PJB's server function. Read the help file for it for more details.
- **Port** - A seaport is a port where ships can unload cargo or load cargo destined to be transported somewhere else. A data port is a computer connection to an application for the purpose of loading or unloading data. Data is transported over wires or wireless connections using TCP/IP (Transport Control Protocol/Internet Protocol). When a client wants to transfer data to or from a specific application on a server, it must send the port number assigned to the client app and the server app so that the data can be directed to the proper port. You will notice that when you start the server on

PJB, you are required to enter a port number. When you connect the PJB Client to the server, you will need to enter the same port. Port numbers can be 1 to 50,000+. However, some of the lower port numbers are de-facto standards, such as 80 for web pages. We recommend using 9000 to 9999 to avoid conflicts. (Note: These ports are software ports established by TCP/IP. See USB and RJ-45 for hardware ports.)

- **Local Area Network (LAN)** - A computer network is simply a number of interconnected computers. The largest network is probably the World Wide Web (WWW). Believe it or not, when you connect to the WWW, your computer is connected to every other computer that is connected to the WWW. And, conversely, every other connected computer is connected to your computer. Consider this. When you get on the WWW (commonly call the Internet), many millions of computers around the world connect to your computer. This is something you should always be thinking of when you are connected to the WWW. You do not have to connect to the internet to establish and connect to a LAN. As its name implies, a LAN is local. The simplest LAN is two computers and a hub which can be wired or wireless. This allows the two computers to be connected and to transfer data to each other. The computers do not have to be connected to the internet. See "[The Basic Block Diagram](#)".
- **Tags** - Tags as used here are like the tags attached to some products. They have information on them about the product and can be removed without damage to the product. MP3 tags are typically appended to the beginning or the end of song files. For more information see "[Modifying Tags](#)".
- **Path** - Basically what you follow to get somewhere. All the files you use on your computer are stored somewhere. Files can be stored on hard drives within the computer case or in portable cases attached to the computer via USB, Firewire, or eSATA connections. Files can also be stored on "Thumb" drives or USB sticks, or on memory cards like those used in digital cameras. Regardless of where they are stored, a computer must be able to find them before it can use them. A Path is the way a computer finds files. Paths involve identifying the storage device and its organization. With the Windows operating system storage devices are each given a letter as an identifier. Before hard drives and the other storage devices mentioned above, the primary storage device was a floppy disk. Early computers had one or two floppy disk drives into which a floppy disk could be inserted. As a result, the letters "A" and "B" were assigned to the two floppy drives. Then came hard drives. They were called "hard" drives because the magnetic platters on which the data was stored were rigid rather than flexible like floppies. The first hard drive in the system is usually assigned the letter "C". Files can be stored directly on a drive (referred to as the drive's root). For example, you can name a file "happy" and store it on drive "C". Its path would be "C:\happy". Obviously, different files cannot have the same name because the computer could not tell which is which. To make it easier to differentiate between files, the "file folder" scheme was developed. Folders are also called directories. If you have two files named "happy", one of which is a game and the other being a song, you can create a folder named "songs" and a folder named "games" on your "C" drive. Now you can store "happy", the song, in folder "songs" and "happy", the game, in folder "games". When you want to use "happy", the game, you will have to tell the computer to retrieve "C:\games\happy". You have told the computer to go to drive "C" and find folder "games". Then look in "games" and find file "happy". The ":" indicates that the previous letter was the drive. the "\" indicates that the following is a folder unless it is the last "\" which will be followed by a file name. By doing all this, you have created a Path (C:\games\happy). Hopefully, you now know that the path to "happy", the song is "C:\songs\happy". There is another discussion of paths [here](#).
- **File Extensions** - Every file has a two part name. (Note: Here we are discussing the part of the file path that follows the last \. This is considered to be the "file name".) The two parts are the "friendly name" (before the ".") and the extension (following the "."), i.e. "readme.txt". Quite often the extension is hidden. Options within Windows, specifically "Folder Options" provide a way to show file extensions when listing files. But, that is beyond the scope of this writing. Extensions are used to allow the Windows operating system to associate a file with an application that can open and display it. Some examples are \*.doc, \*.txt, \*.xls, \*.mp3, \*.jpg, etc. "\*.doc" files are usually associated with Microsoft (MS) Word. When you open a \*.doc file, Windows will first start MS Word (or WordPad if Word is not installed) and use it to open the \*.doc file. Likewise, \*.mp3 files will be associated with a media player so that it can be opened and played. Being able to see and

recognize a file extension is useful because it enables you to know what type of application will be needed to work with the file.

- **USB** - USB are initials and stand for **Universal Serial Bus**. Early in the development of computers two major hardware ports were used for peripheral equipment such as printers and monitors. A parallel port was used, most often, for printers. A serial port was used for telephone line modems and sometimes video monitors. An explanation of the differences between these types of ports is beyond the scope here. Today, the prevalent port for hardware peripherals is USB. In tech speak, a bus is an electrical path along which compatible devices can be attached. A reasonable analogy is the 110 volt power outlets in the typical home. Appliances, lights, TVs and other devices can be plugged into them and operated. The USB is similar. USB was developed to be extensible and standard. Today, printers, external hard drives, mice, keyboards, and many other peripherals can be plugged into a USB connector on a computer. Furthermore, a USB hub can be plugged into a USB port and provide 2 to 8 or more USB ports (extensibility). The current USB version is 3.0 and is about 10 times faster than USB 2.0. Most USB 3.0 devices will work with 2.0, but at 2.0 speed.
- **RJ-45 Port** - RJ-45 ports are hardware ports related to LANs. Internet modems are used to provide access to the Internet. Your Internet Service Provider (ISP) may be a cable company such as Comcast or Time Warner or a telephone company such as Verizon or ATT. The ISP will provide you with a modem that connects you to the internet service. The modem will have a number of RJ-45 connectors. One will be labeled WAN (Wide Area Network, i.e. the Internet). The others will be labeled 1, 2, 3, 4 and so on. These are your LAN connections. You can connect a computer to each of the RJ-45 connectors and access the Internet. This, of course, assumes that each of the computers has a RJ-45 connector.
- **Using the terms "Or" and "And"** in the Filter facility. Admittedly, this can be one of the most confusing activities. Consider the criteria to be "genre" and your goal is to select all songs where the genre is "Jazz" as well as all songs where the genre is "Big Band". So, you go into the [filter](#) window and select "Genre" in "Field Name", then "=" in "Operation" then type in Jazz in "Condition" and select "And" in "Operand". Then, on the next line, you select "Genre", "=", "Big Band", "And". When you click on "OK", you notice that nothing is showing in your filtered library. What happened? Well, the criteria you have selected will be applied to each song in your library. That means you have ask for all the songs that have for genre the value "Jazz AND Big Band". Since genre can be "Jazz OR Big Band" but not both, no songs meet the criteria you have set. Now, do the same thing except use "Or" as the operand. This time, assuming you have songs in your library with the genre tags "Jazz" and "Big Band", you will get that list in your filtered library grid. Now let's consider selecting songs that are tagged for artist as "Chet Baker" and tagged for genre as "Big Band". Since the criteria "Artist" and the criteria "Genre" are two different fields, it is possible that some songs by Chet Baker have the genre Big Band. Here you would use the operand "And". Otherwise, if you used "Or", the result would include all the artists with genre equal "Big Band" as well as all songs by Chet Baker--"Big Band" or not. While this may be confusing at first, after some thought and use, you can become proficient at some pretty complex filters.
- **eSATA** - This acronym stands for "external Serial Advanced Technology Attachment". This is a very fast serial connection method used for external hard drive connections. Most hard drives today are serial ATA drives as opposed to parallel ATA drives. This approach for external connection was once the fastest connection for external drives. However, today's USB 3.0 rivals its speed and is rapidly becoming a defacto standard.

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